FINAL REPORT

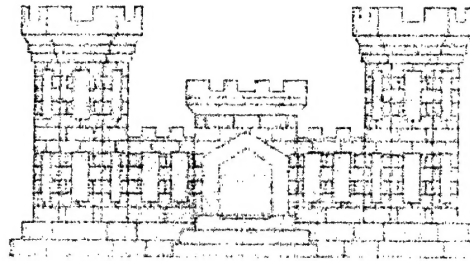## FORT GORDON ENERGY SURVEY & ANALYSIS OF
BOILER AND CHILLER PLANTS
BUILDING 25910
BUILDING 25330
HEATING LOADS

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PROPOSED ENERGY CONSERVATION OPPORTUNITIES
FOR
SAVANNAH DISTRICT CORPS OF ENGINEERS
CONTRACT NUMBER: DACA21-93-C-0110

VOLUME III
OF 3

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HARRISON AND SPENCER, INC.
ENGINEERS · ARCHITECTS · PLANNERS
438 COTTON AVENUE   *MACON, GEORGIA*
P.O. BOX 4246   *(912) 742-5751*

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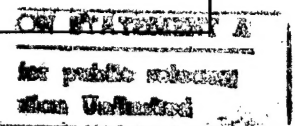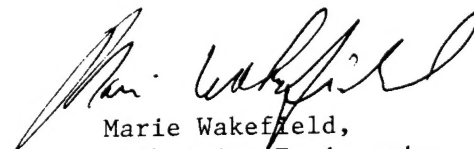
APPENDIX II
HEAT LOADS BUILDING 25330

TRANE TRACE HEAT LOAD ANALYSIS

INTRODUCTION:

The Trace 600 program was used to generate the heating requirements for each of the building types surveyed during the field study. The data produced from the program was based on several conditions that will be explained here.

INPUTING THE DATA:

The weather data for the simulation was based on standard weather tables in the Trace Program for the Augusta area. The design outside dry bulb temperature was 23°F, and internal loads such as people, lights, and miscellaneous equipment were not considered. Ventilation and infiltration were considered. Ventilation was defined as 15 cfm/person, infiltration for heating purposes was defined as 0.1 cfm/sf.

OUTPUT DATA:

The report produced heating requirements for the building hourly for five day type conditions. Design, Weekday, Saturday, Sunday, and Monday. The only one column from each building type was selected for the analysis and reporting process. This day type was usually the weekday column. The worst case condition was selected as a conservative approach to providing requirements that may tend toward the high side. Particular attention was paid to the values to assure that the data produced a smooth curve with few spikes and valleys. The information for all twelve months was transferred to Table 3C or 4C for further data reduction.

SUMMARY:

Appendix I contains the Trace output heat load data for Building 25910, North Central Utility Plant. Appendix II contains the Trace output data for the South Central Plant Building 25330. The data was used to accumulate the hourly load requirements on each of the two central utility plants.

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**                                                                **
**              T R A C E   6 0 0    A N A L Y S I S              **
**                                                                **
**                  by            **                              **
**                                                                **
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ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 24412 (5 BUILDINGS)

Weather File Code:	AUGUSTA
Location:	FORT GORDON, GEORGIA
Latitude:	33.0 (deg)
Longitude:	82.0 (deg)
Time Zone:	5
Elevation:	143 (ft)
Barometric Pressure:	29.8 (in. Hg)

Summer Clearness Number:	0.90
Winter Clearness Number:	0.90
Summer Design Dry Bulb:	95 (F)
Summer Design Wet Bulb:	76 (F)
Winter Design Dry Bulb:	23 (F)
Summer Ground Relectance:	0.20
Winter Ground Relectance:	0.20

Air Density:	0.0756	(Lbm/cuft)
Air Specific Heat:	0.2444	(Btu/lbm/F)
Density-Specific Heat Prod:	1.1094	(Btu-min./hr/cuft/F)
Latent Heat Factor:	4,883.6	(Btu-min./hr/cuft)
Enthalpy Factor:	4.5387	(Lb-min./hr/cuft)

Design Simulation Period: April   To October
System Simulation Period: January   To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 16:29:38   8/16/94
Dataset Name: FGTYPS31 .TM

System   1   Block   FC   - FAN COIL

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*************************** COOLING COIL PEAK *********************************** CLG SPACE PEAK ************ HEATING COIL PEAK ********
Peaked at Time ==)              Mo/Hr:  8/16                       *      Mo/Hr: 6/17      *         Mo/Hr: 13/ 1
Outside Air ==)           OADB/WB/HR:  96/ 76/105.0                *      OADB:  98        *         OADB:  23
                                                                  *                       *
                 Space   Ret. Air Ret. Air    Net  Percnt *     Space    Percnt *  Space Peak   Coil Peak   Percnt
             Sens.+Lat.  Sensible  Latent    Total  Of Tot *   Sensible   Of Tot *  Space Sens   Tot Sens    Of Tot
Envelope Loads (Btuh)    (Btuh)    (Btuh)   (Btuh)   (%)   *    (Btuh)     (%)   *   (Btuh)       (Btuh)      (%)
  Skylite Solr     0        0                    0   0.00  *        0      0.00  *       0            0       0.00
  Skylite Cond     0        0                    0   0.00  *        0      0.00  *       0            0       0.00
  Roof Cond   37,504        0               37,504   9.96  *   40,023     13.71  *  -20,991      -20,991      4.79
  Glass Solar 103,029       0              103,029  27.35  *  114,852     39.34  *       0            0       0.00
  Glass Cond   33,924       0               33,924   9.01  *   38,447     13.17  *  -85,592      -85,592     19.51
  Wall Cond    59,280       0               59,280  15.74  *   66,149     22.66  * -113,980     -113,980     25.99
  Partition        0                             0   0.00  *        0      0.00  *       0            0       0.00
  Exposed Floor    0                             0   0.00  *        0      0.00  *       0            0       0.00
  Infiltration 44,507                       44,507  11.82  *   32,482     11.13  *  -78,754      -78,754     17.96
  Sub Total==) 278,244      0              278,244  73.87  *  291,953    100.00  * -299,317     -299,317     68.24
Internal Loads                                            *                      *
  Lights           0        0                    0   0.00  *        0      0.00  *       0            0       0.00
  People           0                             0   0.00  *        0      0.00  *       0            0       0.00
  Misc             0        0         0          0   0.00  *        0      0.00  *       0            0       0.00
  Sub Total==)     0        0         0          0   0.00  *        0      0.00  *       0            0       0.00
Ceiling Load       0        0                    0   0.00  *        0      0.00  *       0            0       0.00
Outside Air        0        0         0     98,398  26.13  *        0      0.00  *       0     -139,289      31.76
Sup. Fan Heat                                    0   0.00  *               0.00  *                    0       0.00
Ret. Fan Heat               0                    0   0.00  *               0.00  *                    0       0.00
Duct Heat Pkup              0                    0   0.00  *               0.00  *                    0       0.00
OV/UNDR Sizing     0                             0   0.00  *        0      0.00  *       0            0       0.00
Exhaust Heat                0         0          0   0.00  *               0.00  *                    0       0.00
Terminal Bypass             0         0          0  -0.00  *               0.00  *                    0       0.00
                                                          *                      *
Grand Total==) 278,244      0         0    376,642 100.00  *  291,953    100.00  * -299,317     -438,606    100.00
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-------------------------------COOLING COIL SELECTION-------------------------------     --------------AREAS--------------
          Total Capacity  Sens Cap. Coil Airfl   Entering DB/WB/HR    Leaving DB/WB/HR     Gross Total   Glass (sf) (%)
          (Tons)  (Mbh)    (Mbh)     (cfm)    Deg F Deg F Grains   Deg F Deg F Grains    Floor    34,546
Main Clg   31.4   376.6    328.6    34,546    76.7  67.9   89.2    67.4  64.8   88.5    Part         0
Aux  Clg    0.0     0.0      0.0         0     0.0   0.0    0.0     0.0   0.0    0.0    ExFlr        0
Opt Vent    0.0     0.0      0.0         0     0.0   0.0    0.0     0.0   0.0    0.0    Roof    11,515          0    0
Totals     31.4   376.6                                                               Wall    15,775      1,689   11
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-----------HEATING COIL SELECTION-------------   --------AIRFLOWS (cfm)--------   --ENGINEERING CHECKS--   --TEMPERATURES (F)---
         Capacity  Coil Airfl   Ent    Lvg      Type    Cooling  Heating    Clg % OA        8.1      Type     Clg   Htg
         (Mbh)      (cfm)     Deg F   Deg F     Vent     2,790    2,790     Clg Cfm/Sqft     1.00     SADB    67.4  75.8
Main Htg  -438.6    34,546    64.4    75.8      Infil    1,262    1,577     Clg Cfm/Ton   1100.64     Plenum  75.0  68.0
Aux  Htg    0.0          0     0.0     0.0      Supply  34,546   34,546     Clg Sqft/Ton  1100.64     Return  75.0  68.0
Preheat  -115.6     34,546    64.4    67.4      Mincfm       0        0     Clg Btuh/Sqft   10.90     Ret/OA  76.7  64.4
Reheat      0.0          0     0.0     0.0      Return  34,546   34,546     No. People       186      Runarnd 75.0  68.0
Humidif     0.0          0     0.0     0.0      Exhaust  2,790    2,790     Htg % OA         8.1      Fn MtrTD 0.0   0.0
Opt Vent    0.0          0     0.0     0.0      Rm Exh       0        0     Htg Cfm/SqFt     1.00     Fn BldTD 0.0   0.0
Total    -438.6                                 Auxil        0        0     Htg Btuh/SqFt  -12.70     Fn Frict 0.0   0.0
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BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

January			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-354,572	0.0	-262,715	0.0	-262,717	0.0	-262,717	0.0	-262,717	0.0
2	32.9	30.7	-329,194	0.0	-267,137	0.0	-267,137	0.0	-267,137	0.0	-267,137	0.0
3	33.1	31.3	-309,885	0.0	-266,870	0.0	-266,870	0.0	-266,870	0.0	-266,870	0.0
4	33.9	32.1	-294,913	0.0	-264,340	0.0	-264,340	0.0	-264,340	0.0	-264,340	0.0
5	35.2	33.5	-282,748	0.0	-259,974	0.0	-259,974	0.0	-259,974	0.0	-259,974	0.0
6	37.0	35.4	-271,217	0.0	-254,369	0.0	-254,369	0.0	-254,369	0.0	-254,369	0.0
7	39.0	37.6	-260,116	0.0	-247,177	0.0	-247,177	0.0	-247,177	0.0	-247,177	0.0
8	41.3	40.1	-247,473	0.0	-234,514	0.0	-234,514	0.0	-234,514	0.0	-234,514	0.0
9	43.7	42.5	-230,480	0.0	-209,547	0.0	-209,547	0.0	-209,547	0.0	-209,547	0.0
10	46.1	44.0	-166,711	0.0	-193,596	0.0	-193,596	0.0	-193,596	0.0	-193,596	0.0
11	48.4	45.0	-94,297	0.0	-172,201	0.0	-172,201	0.0	-172,201	0.0	-172,201	0.0
12	50.5	45.6	-70,022	0.0	-165,244	0.0	-165,244	0.0	-165,244	0.0	-165,244	0.0
13	52.2	46.1	-55,133	0.0	-154,643	0.0	-154,643	0.0	-154,643	0.0	-154,643	0.0
14	53.5	46.4	-40,960	0.0	-145,327	0.0	-145,327	0.0	-145,327	0.0	-145,327	0.0
15	54.3	46.3	-19,306	0.0	-132,116	0.0	-132,116	0.0	-132,116	0.0	-132,116	0.0
16	54.6	46.1	-7,802	0.0	-123,252	0.0	-123,252	0.0	-123,252	0.0	-123,252	0.0
17	54.0	45.9	-13,699	0.0	-123,702	0.0	-123,702	0.0	-123,702	0.0	-123,702	0.0
18	52.5	45.0	-50,013	0.0	-137,593	0.0	-137,593	0.0	-137,593	0.0	-137,593	0.0
19	50.1	44.8	-83,152	0.0	-154,602	0.0	-154,602	0.0	-154,602	0.0	-154,602	0.0
20	47.1	43.3	-115,251	0.0	-177,726	0.0	-177,726	0.0	-177,726	0.0	-177,726	0.0
21	43.7	40.4	-137,214	0.0	-195,254	0.0	-195,254	0.0	-195,254	0.0	-195,254	0.0
22	40.4	37.3	-159,977	0.0	-218,077	0.0	-218,077	0.0	-218,077	0.0	-218,077	0.0
23	37.3	34.9	-173,984	0.0	-235,516	0.0	-235,516	0.0	-235,516	0.0	-235,516	0.0
24	34.9	32.6	-185,214	0.0	-252,994	0.0	-252,994	0.0	-252,994	0.0	-252,994	0.0

February			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-180,003	0.0	-213,109	0.0	-213,109	0.0	-213,109	0.0	-213,109	0.0
2	39.7	37.1	-189,084	0.0	-226,788	0.0	-226,788	0.0	-226,788	0.0	-226,788	0.0
3	37.8	35.1	-200,874	0.0	-240,877	0.0	-240,877	0.0	-240,877	0.0	-240,877	0.0
4	36.3	33.8	-206,452	0.0	-246,543	0.0	-246,543	0.0	-246,543	0.0	-246,543	0.0
5	35.1	32.6	-214,442	0.0	-260,095	0.0	-260,095	0.0	-260,095	0.0	-260,095	0.0
6	34.4	32.0	-214,445	0.0	-261,775	0.0	-261,775	0.0	-261,775	0.0	-261,775	0.0
7	34.1	31.9	-210,806	0.0	-263,446	0.0	-263,446	0.0	-263,446	0.0	-263,446	0.0
8	34.6	32.4	-195,261	0.0	-260,547	0.0	-260,547	0.0	-260,547	0.0	-260,547	0.0
9	36.0	33.8	-146,138	0.0	-235,337	0.0	-235,337	0.0	-235,337	0.0	-235,337	0.0
10	38.2	34.7	-107,835	0.0	-219,094	0.0	-219,094	0.0	-219,094	0.0	-219,094	0.0
11	40.9	36.2	-73,007	0.0	-205,186	0.0	-205,186	0.0	-205,186	0.0	-205,186	0.0
12	43.9	37.4	-51,097	0.0	-191,499	0.0	-191,499	0.0	-191,499	0.0	-191,499	0.0
13	46.9	39.4	-38,717	0.0	-178,000	0.0	-178,000	0.0	-178,000	0.0	-178,000	0.0
14	49.7	41.4	-26,851	0.0	-160,002	0.0	-160,002	0.0	-160,002	0.0	-160,002	0.0
15	51.8	42.8	-4,387	0.0	-138,605	0.0	-138,605	0.0	-138,605	0.0	-138,605	0.0
16	53.2	43.9	0	0.0	-124,407	0.0	-124,407	0.0	-124,407	0.0	-124,407	0.0
17	53.7	44.2	0	0.0	-117,073	0.0	-117,073	0.0	-117,073	0.0	-117,073	0.0
18	53.4	44.4	0	0.0	-117,948	0.0	-117,948	0.0	-117,948	0.0	-117,948	0.0
19	52.7	44.4	-46,627	0.0	-136,670	0.0	-136,670	0.0	-136,670	0.0	-136,670	0.0
20	51.5	45.2	-92,152	0.0	-150,651	0.0	-150,651	0.0	-150,651	0.0	-150,651	0.0
21	50.0	44.6	-117,460	0.0	-162,764	0.0	-162,764	0.0	-162,764	0.0	-162,764	0.0
22	48.1	43.3	-137,865	0.0	-175,712	0.0	-175,712	0.0	-175,712	0.0	-175,712	0.0
23	46.1	41.8	-157,991	0.0	-186,441	0.0	-186,441	0.0	-186,441	0.0	-186,441	0.0
24	43.9	40.1	-169,715	0.0	-201,469	0.0	-201,469	0.0	-201,469	0.0	-201,469	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

March			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-69,901	0.0	0	0.0	-119,887	0.0	-119,887	0.0	-119,887	0.0
2	48.7	44.6	-81,004	0.0	0	0.0	-137,248	0.0	-137,248	0.0	-137,248	0.0
3	46.6	42.9	-93,757	0.0	0	0.0	-150,474	0.0	-150,474	0.0	-150,474	0.0
4	44.9	41.4	-101,161	0.0	-157,826	0.0	-159,245	0.0	-159,245	0.0	-159,245	0.0
5	43.9	40.8	-109,470	0.0	-168,801	0.0	-168,801	0.0	-168,801	0.0	-168,801	0.0
6	43.5	40.8	-109,251	0.0	-172,486	0.0	-172,486	0.0	-172,486	0.0	-172,486	0.0
7	44.0	41.4	-105,323	0.0	-170,034	0.0	-170,034	0.0	-170,034	0.0	-170,034	0.0
8	45.4	42.7	-65,564	0.0	-148,585	0.0	-148,585	0.0	-148,585	0.0	-148,585	0.0
9	47.7	44.3	-16,083	0.0	-124,920	0.0	-124,920	0.0	-124,920	0.0	-124,920	0.0
10	50.6	45.8	0	0.0	-101,786	0.0	-101,786	0.0	-101,786	0.0	-101,786	0.0
11	53.9	47.4	0	0.0	-72,008	0.0	-72,008	0.0	-72,008	0.0	-72,008	0.0
12	57.4	49.0	0	0.0	-52,363	0.0	-52,363	0.0	-52,363	0.0	-52,363	0.0
13	60.7	50.8	0	0.0	-39,471	0.0	-39,471	0.0	-39,471	0.0	-39,471	0.0
14	63.6	52.7	0	0.0	-17,709	0.0	-17,709	0.0	-17,709	0.0	-17,709	0.0
15	65.9	53.7	0	0.0	-5,443	0.0	-5,443	0.0	-5,443	0.0	-5,443	0.0
16	67.3	54.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	11.0	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	9.3	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	4.9	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	-19,036	0.0	-31,591	0.0	-31,591	0.0	-31,591	0.0	-31,591	0.0
22	60.0	54.1	0	0.0	-65,654	0.0	-65,654	0.0	-65,654	0.0	-65,654	0.0
23	57.1	51.9	0	0.0	-84,840	0.0	-84,840	0.0	-84,840	0.0	-84,840	0.0
24	54.2	49.4	0	0.0	-106,001	0.0	-106,001	0.0	-106,001	0.0	-106,001	0.0

April			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2	51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	53.5	50.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	53.2	51.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	53.9	51.5	0	0.0	-3,440	0.0	-33,331	0.0	-33,331	0.0	-33,331	0.0
9	55.9	52.1	0	0.0	-47,873	0.0	-47,873	0.0	-47,873	0.0	-47,873	0.0
10	58.9	53.2	0	0.0	-9,724	0.0	-9,724	0.0	-9,724	0.0	-9,724	0.0
11	62.6	55.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	66.5	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	9.8	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	15.6	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	17.1	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	18.2	0	0.0	0	0.0	0	0.0	0	0.0
17	75.6	62.0	0	18.4	0	0.0	0	0.0	0	0.0	0	0.0
18	74.9	61.7	0	17.3	0	0.0	0	0.0	0	0.0	0	0.0
19	73.7	62.0	0	13.3	0	0.0	0	0.0	0	0.0	0	0.0
20	72.1	62.4	0	9.6	0	0.0	0	0.0	0	0.0	0	0.0
21	70.2	63.3	0	6.4	0	1.2	0	1.2	0	1.2	0	1.2
22	68.0	62.5	0	4.3	-7,863	0.0	-7,863	0.0	-7,863	0.0	-7,863	0.0
23	65.7	60.5	0	2.6	-24,393	0.0	-24,393	0.0	-24,393	0.0	-24,393	0.0
24	63.4	58.5	0	0.9	-2,570	0.0	-2,570	0.0	-2,570	0.0	-2,570	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

May

Hour	OADB	OAWB	Design Htg Btuh	Design Clg Ton	Weekday Htg Btuh	Weekday Clg Ton	Saturday Htg Btuh	Saturday Clg Ton	Sunday Htg Btuh	Sunday Clg Ton	Monday Htg Btuh	Monday Clg Ton
1	68.2	63.5	0	2.7	0	0.0	0	0.0	0	0.0	0	0.0
2	65.7	61.5	0	4.7	-11,054	0.0	-11,054	0.0	-11,054	0.0	-11,054	0.0
3	63.6	59.7	0	3.8	-27,368	0.0	-27,368	0.0	-27,368	0.0	-27,368	0.0
4	61.8	58.4	0	2.8	-40,702	0.0	-40,702	0.0	-40,702	0.0	-40,702	0.0
5	60.5	57.1	0	2.5	-3,756	0.0	-3,756	0.0	-3,756	0.0	-3,756	0.0
6	59.7	56.5	0	2.4	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	4.8	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	8.2	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	11.5	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	14.8	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	17.5	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	19.3	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	20.6	0	8.7	0	8.7	0	8.7	0	8.7
14	81.9	65.3	0	22.3	0	11.1	0	11.1	0	11.1	0	11.1
15	84.1	66.9	0	24.2	0	13.5	0	13.5	0	13.5	0	13.5
16	84.9	67.1	0	25.1	0	14.1	0	14.1	0	14.1	0	14.1
17	84.6	67.3	0	25.3	0	14.4	0	14.4	0	14.4	0	14.4
18	83.8	67.1	0	23.8	0	13.9	0	13.9	0	13.9	0	13.9
19	82.4	67.5	0	20.9	0	12.0	0	12.0	0	12.0	0	12.0
20	80.6	68.9	0	16.4	0	9.4	0	9.4	0	9.4	0	9.4
21	78.5	71.0	0	13.1	0	7.4	0	7.4	0	7.4	0	7.4
22	76.1	69.9	0	10.7	0	5.4	0	5.4	0	5.4	0	5.4
23	73.4	68.0	0	8.5	0	3.8	0	3.8	0	3.8	0	3.8
24	70.8	65.5	0	7.2	0	2.0	0	2.0	0	2.0	0	2.0

June

Hour	OADB	OAWB	Design Htg Btuh	Design Clg Ton	Weekday Htg Btuh	Weekday Clg Ton	Saturday Htg Btuh	Saturday Clg Ton	Sunday Htg Btuh	Sunday Clg Ton	Monday Htg Btuh	Monday Clg Ton
1	74.7	70.1	0	12.7	0	5.8	0	7.6	0	7.6	0	7.6
2	72.6	68.4	0	11.4	0	4.5	0	5.2	0	5.2	0	5.2
3	70.9	67.3	0	10.6	0	3.3	0	3.5	0	3.5	0	3.5
4	69.6	66.5	0	9.6	0	2.5	0	2.6	0	2.6	0	2.6
5	68.7	65.8	0	9.2	0	1.6	0	1.6	0	1.6	0	1.6
6	68.5	65.7	0	9.1	0	1.3	0	1.4	0	1.4	0	1.4
7	69.0	66.3	0	11.5	0	2.6	0	2.6	0	2.6	0	2.6
8	70.6	66.9	0	15.0	0	4.5	0	4.5	0	4.5	0	4.5
9	73.0	67.7	0	19.1	0	6.6	0	6.6	0	6.6	0	6.6
10	76.1	68.1	0	22.7	0	10.1	0	10.1	0	10.1	0	10.1
11	79.5	69.1	0	25.3	0	12.3	0	12.3	0	12.3	0	12.3
12	82.9	70.1	0	26.9	0	14.2	0	14.2	0	14.2	0	14.2
13	86.0	71.0	0	28.1	0	15.7	0	15.7	0	15.7	0	15.7
14	88.4	72.5	0	29.4	0	18.6	0	18.6	0	18.6	0	18.6
15	90.0	74.0	0	31.4	0	22.2	0	22.2	0	22.2	0	22.2
16	90.5	73.7	0	31.4	0	22.1	0	22.1	0	22.1	0	22.1
17	90.3	74.2	0	31.4	0	23.0	0	23.0	0	23.0	0	23.0
18	89.4	73.9	0	31.4	0	22.5	0	22.5	0	22.5	0	22.5
19	88.1	74.5	0	31.0	0	20.2	0	20.2	0	20.2	0	20.2
20	86.4	75.3	0	23.8	0	17.3	0	17.3	0	17.3	0	17.3
21	84.3	76.5	0	19.4	0	16.6	0	16.6	0	16.6	0	16.6
22	81.9	75.7	0	17.1	0	14.8	0	14.8	0	14.8	0	14.8
23	79.5	74.0	0	15.2	0	12.8	0	12.8	0	12.8	0	12.8
24	77.0	72.1	0	14.0	0	9.8	0	9.8	0	9.8	0	9.8

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

July Hour	OADB	OAWB	Design Htg Btuh	Design Clg Ton	Weekday Htg Btuh	Weekday Clg Ton	Saturday Htg Btuh	Saturday Clg Ton	Sunday Htg Btuh	Sunday Clg Ton	Monday Htg Btuh	Monday Clg Ton
1	73.7	70.5	0	15.2	0	4.5	0	6.1	0	6.1	0	6.1
2	72.4	69.4	0	12.4	0	4.0	0	4.4	0	4.4	0	4.4
3	71.3	68.4	0	11.2	0	3.3	0	3.4	0	3.4	0	3.4
4	70.5	67.7	0	10.5	0	2.2	0	2.2	0	2.2	0	2.2
5	70.0	67.4	0	9.5	0	1.7	0	1.8	0	1.8	0	1.8
6	69.9	67.5	0	9.4	0	1.5	0	1.5	0	1.5	0	1.5
7	70.3	68.0	0	11.8	0	2.7	0	2.7	0	2.7	0	2.7
8	71.7	69.0	0	15.9	0	5.2	0	5.2	0	5.2	0	5.2
9	73.7	69.5	0	19.5	0	8.0	0	8.0	0	8.0	0	8.0
10	76.2	70.6	0	22.7	0	11.5	0	11.5	0	11.5	0	11.5
11	78.9	71.8	0	24.5	0	13.8	0	13.8	0	13.8	0	13.8
12	81.4	73.0	0	26.5	0	16.0	0	16.0	0	16.0	0	16.0
13	83.4	74.4	0	27.2	0	17.1	0	17.1	0	17.1	0	17.1
14	84.8	74.8	0	28.9	0	18.8	0	18.8	0	18.8	0	18.8
15	85.2	75.0	0	30.5	0	20.3	0	20.3	0	20.3	0	20.3
16	85.1	75.0	0	31.4	0	20.4	0	20.4	0	20.4	0	20.4
17	84.6	74.7	0	31.4	0	20.4	0	20.4	0	20.4	0	20.4
18	83.8	74.6	0	31.4	0	20.0	0	20.0	0	20.0	0	20.0
19	82.7	74.6	0	29.3	0	18.2	0	18.2	0	18.2	0	18.2
20	81.4	74.4	0	22.1	0	15.7	0	15.7	0	15.7	0	15.7
21	79.9	74.9	0	19.6	0	14.0	0	14.0	0	14.0	0	14.0
22	78.4	74.0	0	17.4	0	12.1	0	12.1	0	12.1	0	12.1
23	76.8	72.7	0	15.8	0	9.3	0	9.3	0	9.3	0	9.3
24	75.2	71.6	0	14.5	0	7.7	0	7.7	0	7.7	0	7.7

August Hour	OADB	OAWB	Design Htg Btuh	Design Clg Ton	Weekday Htg Btuh	Weekday Clg Ton	Saturday Htg Btuh	Saturday Clg Ton	Sunday Htg Btuh	Sunday Clg Ton	Monday Htg Btuh	Monday Clg Ton
1	75.0	72.0	0	15.0	0	6.1	0	8.0	0	8.0	0	8.0
2	73.2	70.3	0	12.0	0	5.1	0	5.6	0	5.6	0	5.6
3	71.7	68.9	0	10.2	0	3.8	0	4.0	0	4.0	0	4.0
4	70.4	67.8	0	9.4	0	2.8	0	2.9	0	2.9	0	2.9
5	69.5	66.8	0	8.5	0	1.7	0	1.7	0	1.7	0	1.7
6	68.9	66.4	0	8.5	0	1.2	0	1.2	0	1.2	0	1.2
7	68.7	66.4	0	9.6	0	1.5	0	1.5	0	1.5	0	1.5
8	69.2	66.8	0	13.6	0	3.0	0	3.0	0	3.0	0	3.0
9	70.8	67.7	0	18.5	0	5.6	0	5.6	0	5.6	0	5.6
10	73.2	67.7	0	21.7	0	8.1	0	8.1	0	8.1	0	8.1
11	76.2	68.8	0	24.3	0	10.1	0	10.1	0	10.1	0	10.1
12	79.3	70.3	0	25.7	0	12.1	0	12.1	0	12.1	0	12.1
13	82.3	72.2	0	26.7	0	14.4	0	14.4	0	14.4	0	14.4
14	84.7	73.7	0	29.2	0	16.9	0	16.9	0	16.9	0	16.9
15	86.3	74.6	0	30.9	0	20.1	0	20.1	0	20.1	0	20.1
16	86.8	75.1	0	31.4	0	21.1	0	21.1	0	21.1	0	21.1
17	86.6	75.1	0	31.4	0	21.2	0	21.2	0	21.2	0	21.2
18	86.0	75.3	0	31.4	0	21.7	0	21.7	0	21.7	0	21.7
19	85.1	76.0	0	27.1	0	19.3	0	19.3	0	19.3	0	19.3
20	83.8	76.8	0	21.4	0	17.1	0	17.1	0	17.1	0	17.1
21	82.3	77.2	0	19.4	0	16.0	0	16.0	0	16.0	0	16.0
22	80.6	76.3	0	16.7	0	14.8	0	14.8	0	14.8	0	14.8
23	78.7	75.3	0	14.8	0	12.0	0	12.0	0	12.0	0	12.0
24	76.8	73.7	0	13.5	0	9.9	0	9.9	0	9.9	0	9.9

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

September			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	7.9	0	0.4	0	0.9	0	0.9	0	0.9
2	67.6	65.0	0	5.4	-6,789	0.0	-6,789	0.0	-6,789	0.0	-6,789	0.0
3	65.8	63.4	0	4.6	-22,039	0.0	-22,039	0.0	-22,039	0.0	-22,039	0.0
4	64.3	62.2	0	4.0	-29,501	0.0	-29,501	0.0	-29,501	0.0	-29,501	0.0
5	63.1	61.1	0	3.4	-2,750	0.0	-2,750	0.0	-2,750	0.0	-2,750	0.0
6	62.4	60.3	0	3.3	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	7.0	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	10.8	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	13.7	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	16.3	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	17.9	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	19.0	0	7.3	0	7.3	0	7.3	0	7.3
14	81.2	68.4	0	20.5	0	10.0	0	10.0	0	10.0	0	10.0
15	83.0	70.0	0	22.8	0	11.5	0	11.5	0	11.5	0	11.5
16	83.7	70.5	0	24.1	0	12.7	0	12.8	0	12.8	0	12.8
17	83.4	70.5	0	23.9	0	13.1	0	13.1	0	13.1	0	13.1
18	82.8	70.9	0	21.8	0	12.5	0	12.5	0	12.5	0	12.5
19	81.6	72.7	0	17.5	0	10.7	0	10.7	0	10.7	0	10.7
20	80.1	74.7	0	14.5	0	9.9	0	9.9	0	9.9	0	9.9
21	78.3	74.1	0	11.9	0	8.9	0	8.9	0	8.9	0	8.9
22	76.3	72.4	0	10.1	0	7.0	0	7.0	0	7.0	0	7.0
23	74.1	70.7	0	8.3	0	5.0	0	5.0	0	5.0	0	5.0
24	71.8	68.9	0	7.2	0	2.7	0	2.7	0	2.7	0	2.7

October			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	-103,162	0.0	-103,162	0.0	-103,162	0.0
2	50.1	48.6	0	0.0	0	0.0	-118,067	0.0	-118,067	0.0	-118,067	0.0
3	48.4	46.9	0	0.0	0	0.0	-125,940	0.0	-125,940	0.0	-125,940	0.0
4	47.1	45.8	0	0.0	-53,221	0.0	-137,897	0.0	-137,897	0.0	-137,897	0.0
5	46.3	44.8	0	0.0	-143,287	0.0	-143,287	0.0	-143,287	0.0	-143,287	0.0
6	46.0	44.5	0	0.0	-152,900	0.0	-152,900	0.0	-152,900	0.0	-152,900	0.0
7	46.8	45.3	-27,550	0.0	-149,274	0.0	-149,274	0.0	-149,274	0.0	-149,274	0.0
8	48.9	47.5	-49,644	0.0	-128,140	0.0	-128,140	0.0	-128,140	0.0	-128,140	0.0
9	52.2	49.9	0	0.0	-96,906	0.0	-96,906	0.0	-96,906	0.0	-96,906	0.0
10	56.2	52.5	0	0.0	-67,987	0.0	-67,987	0.0	-67,987	0.0	-67,987	0.0
11	60.4	54.4	0	0.0	-43,866	0.0	-43,866	0.0	-43,866	0.0	-43,866	0.0
12	64.4	56.0	0	0.0	-18,622	0.0	-18,622	0.0	-18,622	0.0	-18,622	0.0
13	67.7	57.3	0	0.0	-6,083	0.0	-6,083	0.0	-6,083	0.0	-6,083	0.0
14	69.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	4.6	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	11.1	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	7.2	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	4.0	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	-17,344	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.0	-28,704	0.0	-28,704	0.0	-28,704	0.0	-28,704	0.0
23	57.0	55.1	0	0.0	-75,356	0.0	-75,356	0.0	-75,356	0.0	-75,356	0.0
24	54.5	52.7	0	0.0	-87,288	0.0	-87,288	0.0	-87,288	0.0	-87,288	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

November			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-90,968	0.0	0	0.0	-115,619	0.0	-115,619	0.0	-115,619	0.0
2	49.4	47.3	-100,415	0.0	0	0.0	-131,830	0.0	-131,830	0.0	-131,830	0.0
3	47.2	45.3	-112,770	0.0	-119,403	0.0	-146,353	0.0	-146,353	0.0	-146,353	0.0
4	45.3	43.4	-119,061	0.0	-159,974	0.0	-159,974	0.0	-159,974	0.0	-159,974	0.0
5	43.9	42.2	-126,474	0.0	-165,866	0.0	-165,866	0.0	-165,866	0.0	-165,866	0.0
6	43.0	41.4	-125,490	0.0	-175,054	0.0	-175,054	0.0	-175,054	0.0	-175,054	0.0
7	42.7	41.2	-120,002	0.0	-177,502	0.0	-177,502	0.0	-177,502	0.0	-177,502	0.0
8	43.5	42.0	-101,192	0.0	-171,798	0.0	-171,798	0.0	-171,798	0.0	-171,798	0.0
9	45.9	44.0	-52,436	0.0	-147,492	0.0	-147,492	0.0	-147,492	0.0	-147,492	0.0
10	49.4	46.6	-8,920	0.0	-120,450	0.0	-120,450	0.0	-120,450	0.0	-120,450	0.0
11	53.8	48.6	0	0.0	-100,920	0.0	-100,920	0.0	-100,920	0.0	-100,920	0.0
12	58.4	50.6	0	0.0	-79,603	0.0	-79,603	0.0	-79,603	0.0	-79,603	0.0
13	62.8	52.6	0	0.0	-55,260	0.0	-55,260	0.0	-55,260	0.0	-55,260	0.0
14	66.3	54.5	0	0.0	-29,921	0.0	-29,921	0.0	-29,921	0.0	-29,921	0.0
15	68.7	55.7	0	0.0	-6,290	0.0	-6,290	0.0	-6,290	0.0	-6,290	0.0
16	69.5	56.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	0.0	-8,940	0.0	-8,940	0.0	-8,940	0.0	-8,940	0.0
19	66.9	59.4	0	0.0	-30,453	0.0	-30,453	0.0	-30,453	0.0	-30,453	0.0
20	65.0	59.4	0	0.0	-44,369	0.0	-44,369	0.0	-44,369	0.0	-44,369	0.0
21	62.8	58.2	0	0.0	-57,731	0.0	-57,731	0.0	-57,731	0.0	-57,731	0.0
22	60.2	56.1	0	0.0	-75,623	0.0	-75,623	0.0	-75,623	0.0	-75,623	0.0
23	57.5	54.0	0	0.0	-86,975	0.0	-86,975	0.0	-86,975	0.0	-86,975	0.0
24	54.7	51.7	0	0.0	-104,374	0.0	-104,374	0.0	-104,374	0.0	-104,374	0.0

December			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-138,520	0.0	-179,189	0.0	-179,189	0.0	-179,189	0.0	-179,189	0.0
2	43.2	41.1	-146,311	0.0	-192,859	0.0	-192,859	0.0	-192,859	0.0	-192,859	0.0
3	41.8	39.8	-157,049	0.0	-202,674	0.0	-202,674	0.0	-202,674	0.0	-202,674	0.0
4	40.7	38.7	-161,769	0.0	-207,575	0.0	-207,575	0.0	-207,575	0.0	-207,575	0.0
5	40.1	38.4	-164,790	0.0	-210,425	0.0	-210,425	0.0	-210,425	0.0	-210,425	0.0
6	39.9	38.4	-163,734	0.0	-216,849	0.0	-216,849	0.0	-216,849	0.0	-216,849	0.0
7	40.5	39.0	-160,091	0.0	-217,364	0.0	-217,364	0.0	-217,364	0.0	-217,364	0.0
8	42.2	40.7	-151,525	0.0	-211,363	0.0	-211,363	0.0	-211,363	0.0	-211,363	0.0
9	44.9	43.4	-114,416	0.0	-183,275	0.0	-183,275	0.0	-183,275	0.0	-183,275	0.0
10	48.2	45.8	-74,793	0.0	-160,867	0.0	-160,867	0.0	-160,867	0.0	-160,867	0.0
11	51.7	48.3	-41,907	0.0	-137,183	0.0	-137,183	0.0	-137,183	0.0	-137,183	0.0
12	55.0	50.7	-20,490	0.0	-118,018	0.0	-118,018	0.0	-118,018	0.0	-118,018	0.0
13	57.7	52.0	-10,069	0.0	-104,369	0.0	-104,369	0.0	-104,369	0.0	-104,369	0.0
14	59.5	52.6	0	0.0	-92,657	0.0	-92,657	0.0	-92,657	0.0	-92,657	0.0
15	60.1	52.7	0	0.0	-79,398	0.0	-79,398	0.0	-79,398	0.0	-79,398	0.0
16	59.9	52.6	0	0.0	-70,607	0.0	-70,607	0.0	-70,607	0.0	-70,607	0.0
17	59.2	52.1	0	0.0	-75,440	0.0	-75,440	0.0	-75,440	0.0	-75,440	0.0
18	58.2	51.8	0	0.0	-91,067	0.0	-91,067	0.0	-91,067	0.0	-91,067	0.0
19	56.8	52.2	0	0.0	-104,520	0.0	-104,520	0.0	-104,520	0.0	-104,520	0.0
20	55.0	51.4	-19,933	0.0	-117,613	0.0	-117,613	0.0	-117,613	0.0	-117,613	0.0
21	53.1	50.1	-82,842	0.0	-128,049	0.0	-128,049	0.0	-128,049	0.0	-128,049	0.0
22	51.0	48.1	-103,343	0.0	-144,134	0.0	-144,134	0.0	-144,134	0.0	-144,134	0.0
23	48.9	46.2	-116,229	0.0	-155,772	0.0	-155,772	0.0	-155,772	0.0	-155,772	0.0
24	46.9	44.1	-126,000	0.0	-169,227	0.0	-169,227	0.0	-169,227	0.0	-169,227	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 24412 (5 BUILDINGS)

-----CARD 08-- Climatic Information --

Weather Code	Summer Clearness Number	Winter Clearness Number	Summer Design Dry Bulb	Summer Design Wet Bulb	Winter Design Dry Bulb	Building Orientation	Summer Ground Reflect	Winter Ground Reflect
AUGUSTA						90		

-----CARD 09-- Load Simulation Periods--

1st Month Cooling Simulation	Last Month Cooling Simulation	Peak Cooling Load Hr	1st Month Summer Period	Last Month Summer Period	1st Month Daylight Savings	Last Month Daylight Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters---------------------------

Cooling Load Method	Heating Load Method	Ventilation Method	Airflow Input Units	Airflow Output Units	Room Circulation Rate	Put Wall RA Load to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

--------------------- Load Section Alternative #1 ---------------------

---- Load Alternative ----

Number	Description
1	ENLISTED BARRACKS

-----CARD 20-- General Room Parameters ---

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
1	1	ALL THREE FLOORS	11515.2		2	0		10	3		

```
-----CARD 21-- Thermostat Parameters -------------------------------------------------
```

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

```
-----CARD 22-- Roof Parameters --------------------------------------------------
```

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				5			

```
-----CARD 24-- Wall Parameters --------------------------------------------------
```

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	226	9.5		7	0			
1	2	50.75	9.5		7	90			
1	3	226	9.5		7	180			
1	4	50.75	9.5		7	270			

```
-----CARD 25-- Wall/Glass Parameters --------------------------------------------------
```

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	28.5	10	1	1.03	.82					
1	3	27.8	10	1	1.03	.82					

```
-----CARD 26-- Schedules --------------------------------------------------
```

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

```
-----CARD 27-- People and Lights --------------------------------------------------
```

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	Daylighting Reference Point 1	Daylighting Reference Point 2
1	62	PEOPLE	255	325	1	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment --

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	REFRIG	6.5	KW	FGHEAT						
1	2	DRYER	17	KW	FGHEAT						
1	3	WASHER	.3	KW	FGHEAT						
1	4	MISS	1	KW	FGHEAT						

-----CARD 29--- Room Airflows --

Room Number	Ventilation Cooling Value	Ventilation Cooling Units	Ventilation Heating Value	Ventilation Heating Units	Infiltration Cooling Value	Infiltration Cooling Units	Infiltration Heating Value	Infiltration Heating Units	Reheat Minimum Value	Reheat Minimum Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows --

Room Number	Main Cooling Value	Main Cooling Units	Main Heating Value	Main Heating Units	Auxiliary Cooling Value	Auxiliary Cooling Units	Auxiliary Heating Value	Auxiliary Heating Units	Room Exhaust Value	Room Exhaust Units
1	1	CFM-SF	1	CFM-SF						

--------------------- System Section Alternative #1 ---------------------

-----CARD 39-- System Alternative -----

Number	Description
1	FAN COILS SYSTEM

-----CARD 40--- System Type --

------------OPTIONAL VENTILATION SYSTEM------------

System Set Number	System Type	Ventil Deck Location	Cooling SADBVh	Heating SADBVh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	FC						

-----CARD 41-- Zone Assignment --

System Set Number	Ref #1 Begin	Ref #1 End	Ref #2 Begin	Ref #2 End	Ref #3 Begin	Ref #3 End	Ref #4 Begin	Ref #4 End	Ref #5 Begin	Ref #5 End	Ref #6 Begin	Ref #6 End
1	1	1										

-----CARD 42--- Fan SP and Duct Parameters---

System Set Number	Cool Fan SP	Heat Fan SP	Return Fan SP	Mn Exh Fan SP	Aux Fan SP	Rm Exh Fan SP	Cool Fan Mtr Loc	Return Fan Mtr Loc	Supply Duct Ht Gn	Supply Duct Loc	Return Air Path
1											

Utility Description Reference Table

    Schedules:
        CLGCONST SAMPLE COOLING TSTAT SCHEDULE
        FGHEAT SCHD FOR HEAT LOAD CALCS
        HTGCONST SAMPLE HEATING TSTAT SCHEDULE
        YES AVAILABLE (100%)
    System:
        FC   (Utility file not found)

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Temperature
----   ------------
  0   75
 24

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   0
 24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   0
 24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Temperature
----   ------------
   0   72
  24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour	Util Percent
0	100
24	

```
*************************************************************************
*************************************************************************
**                                                                   **
**            T R A C E   6 0 0   A N A L Y S I S                     **
**                                                                   **
**            by            **                                       **
**                                                                   **
*************************************************************************
*************************************************************************
```

ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 24404 (2 BUILDINGS)

Weather File Code:	AUGUSTA
Location:	FORT GORDON, GEORGIA
Latitude:	33.0 (deg)
Longitude:	82.0 (deg)
Time Zone:	5
Elevation:	143 (ft)
Barometric Pressure:	29.8 (in. Hg)

Summer Clearness Number:	0.90
Winter Clearness Number:	0.90
Summer Design Dry Bulb:	95 (F)
Summer Design Wet Bulb:	76 (F)
Winter Design Dry Bulb:	23 (F)
Summer Ground Relectance:	0.20
Winter Ground Relectance:	0.20

Air Density:	0.0756 (Lbm/cuft)
Air Specific Heat:	0.2444 (Btu/lbm/F)
Density-Specific Heat Prod:	1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor:	4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor:	4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April   To October
System Simulation Period: January   To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 13:16:32   8/25/94
Dataset Name: FGTPSA31 .TM

System   1   Block   FC   - FAN COIL

*************************** COOLING COIL PEAK ********************************** CLG SPACE PEAK ************ HEATING COIL PEAK ********

Peaked at Time ==)		Mo/Hr: 8/16				*	Mo/Hr: 6/17	*		Mo/Hr: 13/ 1		
Outside Air ==)		OADB/WB/HR: 96/ 76/105.0				*	OADB: 98	*		OADB: 23		

	Space Sens.+Lat. (Btuh)	Ret. Air Sensible (Btuh)	Ret. Air Latent (Btuh)	Net Total (Btuh)	Percnt Of Tot (%)	*	Space Sensible (Btuh)	Percnt Of Tot (%)	*	Space Peak Space Sens (Btuh)	Coil Peak Tot Sens (Btuh)	Percnt Of Tot (%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	45,932	0		45,932	10.67	*	49,017	14.50	*	-25,708	-25,708	5.06
Glass Solar	114,741	0		114,741	26.66	*	127,908	37.84	*	0	0	0.00
Glass Cond	37,780	0		37,780	8.78	*	42,817	12.67	*	-95,322	-95,322	18.76
Wall Cond	71,489	0		71,489	16.61	*	79,703	23.58	*	-136,286	-136,286	26.83
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	51,681			51,681	12.01	*	38,553	11.41	*	-93,475	-93,475	18.40
Sub Total==)	321,623	0		321,623	74.74	*	337,998	100.00	*	-350,791	-350,791	69.05
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	108,684	25.26	*	0	0.00	*	0	-157,262	30.95
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==)	321,623	0	0	430,307	100.00	*	337,998	100.00	*	-350,791	-508,052	100.00

---COOLING COIL SELECTION--   --------------AREAS--------------

	Total Capacity (Tons)	(Mbh)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR Deg F	Deg F	Grains	Leaving DB/WB/HR Deg F	Deg F	Grains		Gross Total	Glass (sf)	(%)
Main Clg	35.9	430.3	378.7	42,309	76.6	68.1	90.1	67.8	65.1	89.6	Floor	42,309		
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0		
Totals	35.9	430.3									Roof	14,103	0	0
											Wall	18,723	1,881	10

------------HEATING COIL SELECTION-------------   --------AIRFLOWS (cfm)--------   --ENGINEERING CHECKS--   --TEMPERATURES (F)---

	Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating			Type	Clg	Htg
Main Htg	-508.1	42,309	64.6	75.5	Vent	3,150	3,150	Clg % OA	7.4	SADB	67.8	75.5
Aux Htg	0.0	0	0.0	0.0	Infil	1,498	1,872	Clg Cfm/Sqft	1.00	Plenum	75.0	68.0
Preheat	-147.8	42,309	64.6	67.8	Supply	42,309	42,309	Clg Cfm/Ton	1179.87	Return	75.0	68.0
Reheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Sqft/Ton	1179.87	Ret/OA	76.6	64.6
Humidif	0.0	0	0.0	0.0	Return	42,309	42,309	Clg Btuh/Sqft	10.17	Runarnd	75.0	68.0
Opt Vent	0.0	0	0.0	0.0	Exhaust	3,150	3,150	No. People	210	Fn MtrTD	0.0	0.0
Total	-508.1				Rm Exh	0	0	Htg % OA	7.4	Fn BldTD	0.0	0.0
					Auxil	0	0	Htg Cfm/SqFt	1.00	Fn Frict	0.0	0.0
								Htg Btuh/SqFt	-12.01			

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

January			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-412,455	0.0	-298,341	0.0	-298,341	0.0	-298,341	0.0	-298,341	0.0
2	32.9	30.7	-382,486	0.0	-300,817	0.0	-300,817	0.0	-300,817	0.0	-300,817	0.0
3	33.1	31.3	-359,256	0.0	-300,889	0.0	-300,889	0.0	-300,889	0.0	-300,889	0.0
4	33.9	32.1	-341,202	0.0	-298,697	0.0	-298,697	0.0	-298,697	0.0	-298,697	0.0
5	35.2	33.5	-326,931	0.0	-294,681	0.0	-294,681	0.0	-294,681	0.0	-294,681	0.0
6	37.0	35.4	-313,100	0.0	-289,102	0.0	-289,102	0.0	-289,102	0.0	-289,102	0.0
7	39.0	37.6	-299,517	0.0	-282,607	0.0	-282,607	0.0	-282,607	0.0	-282,607	0.0
8	41.3	40.1	-284,731	0.0	-274,387	0.0	-274,387	0.0	-274,387	0.0	-274,387	0.0
9	43.7	42.5	-265,470	0.0	-263,818	0.0	-263,818	0.0	-263,818	0.0	-263,818	0.0
10	46.1	44.0	-234,676	0.0	-220,497	0.0	-220,497	0.0	-220,497	0.0	-220,497	0.0
11	48.4	45.0	-112,218	0.0	-200,665	0.0	-200,665	0.0	-200,665	0.0	-200,665	0.0
12	50.5	45.6	-83,725	0.0	-192,401	0.0	-192,401	0.0	-192,401	0.0	-192,401	0.0
13	52.2	46.1	-65,792	0.0	-179,735	0.0	-179,735	0.0	-179,735	0.0	-179,735	0.0
14	53.5	46.4	-49,122	0.0	-168,758	0.0	-168,758	0.0	-168,758	0.0	-168,758	0.0
15	54.3	46.3	-29,280	0.0	-153,631	0.0	-153,631	0.0	-153,631	0.0	-153,631	0.0
16	54.6	46.1	-11,461	0.0	-143,589	0.0	-143,589	0.0	-143,589	0.0	-143,589	0.0
17	54.0	45.9	-18,584	0.0	-144,250	0.0	-144,250	0.0	-144,250	0.0	-144,250	0.0
18	52.5	45.0	-59,826	0.0	-159,885	0.0	-159,885	0.0	-159,885	0.0	-159,885	0.0
19	50.1	44.8	-97,807	0.0	-179,187	0.0	-179,187	0.0	-179,187	0.0	-179,187	0.0
20	47.1	43.3	-134,778	0.0	-205,743	0.0	-205,743	0.0	-205,743	0.0	-205,743	0.0
21	43.7	40.4	-160,030	0.0	-225,753	0.0	-225,753	0.0	-225,753	0.0	-225,753	0.0
22	40.4	37.3	-186,236	0.0	-252,003	0.0	-252,003	0.0	-252,003	0.0	-252,003	0.0
23	37.3	34.9	-202,291	0.0	-271,946	0.0	-271,946	0.0	-271,946	0.0	-271,946	0.0
24	34.9	32.6	-215,183	0.0	-292,069	0.0	-292,069	0.0	-292,069	0.0	-292,069	0.0

February			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-209,255	0.0	-246,327	0.0	-246,327	0.0	-246,327	0.0	-246,327	0.0
2	39.7	37.1	-219,650	0.0	-262,003	0.0	-262,003	0.0	-262,003	0.0	-262,003	0.0
3	37.8	35.1	-233,236	0.0	-273,223	0.0	-273,223	0.0	-273,223	0.0	-273,223	0.0
4	36.3	33.8	-239,607	0.0	-284,626	0.0	-284,626	0.0	-284,626	0.0	-284,626	0.0
5	35.1	32.6	-243,873	0.0	-292,249	0.0	-292,249	0.0	-292,249	0.0	-292,249	0.0
6	34.4	32.0	-243,860	0.0	-295,504	0.0	-295,504	0.0	-295,504	0.0	-295,504	0.0
7	34.1	31.9	-239,632	0.0	-297,750	0.0	-297,750	0.0	-297,750	0.0	-297,750	0.0
8	34.6	32.4	-222,067	0.0	-296,820	0.0	-296,820	0.0	-296,820	0.0	-296,820	0.0
9	36.0	33.8	-171,626	0.0	-290,554	0.0	-290,554	0.0	-290,554	0.0	-290,554	0.0
10	38.2	34.7	-123,232	0.0	-255,715	0.0	-255,715	0.0	-255,715	0.0	-255,715	0.0
11	40.9	36.2	-88,019	0.0	-239,077	0.0	-239,077	0.0	-239,077	0.0	-239,077	0.0
12	43.9	37.4	-62,129	0.0	-223,135	0.0	-223,135	0.0	-223,135	0.0	-223,135	0.0
13	46.9	39.4	-46,967	0.0	-202,138	0.0	-202,138	0.0	-202,138	0.0	-202,138	0.0
14	49.7	41.4	-32,899	0.0	-186,171	0.0	-186,171	0.0	-186,171	0.0	-186,171	0.0
15	51.8	42.8	-7,121	0.0	-161,624	0.0	-161,624	0.0	-161,624	0.0	-161,624	0.0
16	53.2	43.9	0	0.0	-145,444	0.0	-145,444	0.0	-145,444	0.0	-145,444	0.0
17	53.7	44.2	0	0.0	-137,152	0.0	-137,152	0.0	-137,152	0.0	-137,152	0.0
18	53.4	44.4	0	0.0	-138,095	0.0	-138,095	0.0	-138,095	0.0	-138,095	0.0
19	52.7	44.4	-63,926	0.0	-159,242	0.0	-159,242	0.0	-159,242	0.0	-159,242	0.0
20	51.5	45.2	-103,490	0.0	-175,143	0.0	-175,143	0.0	-175,143	0.0	-175,143	0.0
21	50.0	44.6	-137,550	0.0	-188,915	0.0	-188,915	0.0	-188,915	0.0	-188,915	0.0
22	48.1	43.3	-160,942	0.0	-203,691	0.0	-203,691	0.0	-203,691	0.0	-203,691	0.0
23	46.1	41.8	-179,078	0.0	-215,850	0.0	-215,850	0.0	-215,850	0.0	-215,850	0.0
24	43.9	40.1	-197,465	0.0	-233,036	0.0	-233,036	0.0	-233,036	0.0	-233,036	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

March			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-76,688	0.0	0	0.0	-138,569	0.0	-138,569	0.0	-138,569	0.0
2	48.7	44.6	-94,400	0.0	0	0.0	-158,497	0.0	-158,497	0.0	-158,497	0.0
3	46.6	42.9	-104,095	0.0	0	0.0	-168,657	0.0	-168,657	0.0	-168,657	0.0
4	44.9	41.4	-117,567	0.0	-137,307	0.0	-183,689	0.0	-183,689	0.0	-183,689	0.0
5	43.9	40.8	-122,189	0.0	-189,734	0.0	-189,734	0.0	-189,734	0.0	-189,734	0.0
6	43.5	40.8	-121,910	0.0	-198,979	0.0	-198,979	0.0	-198,979	0.0	-198,979	0.0
7	44.0	41.4	-117,378	0.0	-196,117	0.0	-196,117	0.0	-196,117	0.0	-196,117	0.0
8	45.4	42.7	-72,751	0.0	-172,236	0.0	-172,236	0.0	-172,236	0.0	-172,236	0.0
9	47.7	44.3	-21,752	0.0	-145,813	0.0	-145,813	0.0	-145,813	0.0	-145,813	0.0
10	50.6	45.8	0	0.0	-114,563	0.0	-114,563	0.0	-114,563	0.0	-114,563	0.0
11	53.9	47.4	0	0.0	-85,457	0.0	-85,457	0.0	-85,457	0.0	-85,457	0.0
12	57.4	49.0	0	0.0	-62,488	0.0	-62,488	0.0	-62,488	0.0	-62,488	0.0
13	60.7	50.8	0	0.0	-47,177	0.0	-47,177	0.0	-47,177	0.0	-47,177	0.0
14	63.6	52.7	0	0.0	-21,951	0.0	-21,951	0.0	-21,951	0.0	-21,951	0.0
15	65.9	53.7	0	0.0	-7,793	0.0	-7,793	0.0	-7,793	0.0	-7,793	0.0
16	67.3	54.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	8.3	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	10.9	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	5.5	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	-23,609	0.0	-43,589	0.0	-43,589	0.0	-43,589	0.0	-43,589	0.0
22	60.0	54.1	-2,554	0.0	-76,544	0.0	-76,544	0.0	-76,544	0.0	-76,544	0.0
23	57.1	51.9	0	0.0	-98,445	0.0	-98,445	0.0	-98,445	0.0	-98,445	0.0
24	54.2	49.4	0	0.0	-117,769	0.0	-117,769	0.0	-117,769	0.0	-117,769	0.0

April			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2	51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	53.5	50.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	53.2	51.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	53.9	51.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	55.9	52.1	0	0.0	0	0.0	-31,517	0.0	-31,517	0.0	-31,517	0.0
10	58.9	53.2	0	0.0	-10,876	0.0	-13,236	0.0	-13,236	0.0	-13,236	0.0
11	62.6	55.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	66.5	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	9.3	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	17.9	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	19.7	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	21.3	0	0.0	0	0.0	0	0.0	0	0.0
17	75.6	62.0	0	21.5	0	0.0	0	0.0	0	0.0	0	0.0
18	74.9	61.7	0	19.7	0	0.0	0	0.0	0	0.0	0	0.0
19	73.7	62.0	0	15.6	0	0.0	0	0.0	0	0.0	0	0.0
20	72.1	62.4	0	10.9	0	0.0	0	0.0	0	0.0	0	0.0
21	70.2	63.3	0	7.7	-15,959	0.0	-15,959	0.0	-15,959	0.0	-15,959	0.0
22	68.0	62.5	0	4.8	-9,906	0.0	-9,906	0.0	-9,906	0.0	-9,906	0.0
23	65.7	60.5	0	2.9	-28,776	0.0	-28,776	0.0	-28,776	0.0	-28,776	0.0
24	63.4	58.5	0	1.4	-3,025	0.0	-3,025	0.0	-3,025	0.0	-3,025	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

May			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	3.1	0	0.6	0	0.7	0	0.7	0	0.7
2	65.7	61.5	0	5.8	-12,881	0.0	-12,881	0.0	-12,881	0.0	-12,881	0.0
3	63.6	59.7	0	4.4	-31,630	0.0	-31,630	0.0	-31,630	0.0	-31,630	0.0
4	61.8	58.4	0	3.7	-41,949	0.0	-41,949	0.0	-41,949	0.0	-41,949	0.0
5	60.5	57.1	0	2.8	-3,881	0.0	-3,881	0.0	-3,881	0.0	-3,881	0.0
6	59.7	56.5	0	2.8	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	5.5	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	9.2	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	13.4	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	17.2	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	20.4	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	22.5	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	24.1	0	10.1	0	10.1	0	10.1	0	10.1
14	81.9	65.3	0	25.7	0	12.7	0	12.7	0	12.7	0	12.7
15	84.1	66.9	0	27.8	0	15.4	0	15.4	0	15.4	0	15.4
16	84.9	67.1	0	28.8	0	16.2	0	16.2	0	16.2	0	16.2
17	84.6	67.3	0	29.0	0	16.9	0	16.9	0	16.9	0	16.9
18	83.8	67.1	0	27.3	0	16.3	0	16.3	0	16.3	0	16.3
19	82.4	67.5	0	23.9	0	13.8	0	13.8	0	13.8	0	13.8
20	80.6	68.9	0	18.9	0	10.7	0	10.7	0	10.7	0	10.7
21	78.5	71.0	0	15.4	0	8.4	0	8.4	0	8.4	0	8.4
22	76.1	69.9	0	12.3	0	6.1	0	6.1	0	6.1	0	6.1
23	73.4	68.0	0	10.2	0	4.4	0	4.4	0	4.4	0	4.4
24	70.8	65.5	0	8.6	0	2.3	0	2.3	0	2.3	0	2.3

June			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	14.6	0	6.7	0	8.7	0	8.7	0	8.7
2	72.6	68.4	0	13.5	0	5.1	0	6.0	0	6.0	0	6.0
3	70.9	67.3	0	12.2	0	4.2	0	4.6	0	4.6	0	4.6
4	69.6	66.5	0	11.5	0	3.0	0	3.0	0	3.0	0	3.0
5	68.7	65.8	0	11.0	0	2.3	0	2.3	0	2.3	0	2.3
6	68.5	65.7	0	10.5	0	1.6	0	1.6	0	1.6	0	1.6
7	69.0	66.3	0	13.2	0	3.0	0	3.0	0	3.0	0	3.0
8	70.6	66.9	0	16.9	0	5.1	0	5.1	0	5.1	0	5.1
9	73.0	67.7	0	22.1	0	7.9	0	7.9	0	7.9	0	7.9
10	76.1	68.1	0	26.2	0	11.3	0	11.4	0	11.4	0	11.4
11	79.5	69.1	0	28.8	0	14.5	0	14.5	0	14.5	0	14.5
12	82.9	70.1	0	30.7	0	16.7	0	16.7	0	16.7	0	16.7
13	86.0	71.0	0	32.1	0	18.4	0	18.4	0	18.4	0	18.4
14	88.4	72.5	0	34.2	0	21.2	0	21.2	0	21.2	0	21.2
15	90.0	74.0	0	35.9	0	25.3	0	25.3	0	25.3	0	25.3
16	90.5	73.7	0	35.9	0	25.3	0	25.3	0	25.3	0	25.3
17	90.3	74.2	0	35.9	0	26.3	0	26.3	0	26.3	0	26.3
18	89.4	73.9	0	35.9	0	25.7	0	25.7	0	25.7	0	25.7
19	88.1	74.5	0	35.8	0	23.6	0	23.6	0	23.6	0	23.6
20	86.4	75.3	0	27.8	0	19.7	0	19.7	0	19.7	0	19.7
21	84.3	76.5	0	22.3	0	18.9	0	18.9	0	18.9	0	18.9
22	81.9	75.7	0	19.7	0	16.8	0	16.8	0	16.8	0	16.8
23	79.5	74.0	0	17.7	0	14.6	0	14.6	0	14.6	0	14.6
24	77.0	72.1	0	15.9	0	11.3	0	11.3	0	11.3	0	11.3

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

July			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	18.1	0	5.3	0	7.0	0	7.0	0	7.0
2	72.4	69.4	0	14.8	0	5.0	0	5.6	0	5.6	0	5.6
3	71.3	68.4	0	12.8	0	3.7	0	3.9	0	3.9	0	3.9
4	70.5	67.7	0	12.0	0	3.0	0	3.0	0	3.0	0	3.0
5	70.0	67.4	0	11.4	0	2.5	0	2.5	0	2.5	0	2.5
6	69.9	67.5	0	10.8	0	1.7	0	1.8	0	1.8	0	1.8
7	70.3	68.0	0	13.5	0	3.0	0	3.0	0	3.0	0	3.0
8	71.7	69.0	0	18.0	0	5.8	0	5.9	0	5.9	0	5.9
9	73.7	69.5	0	22.6	0	9.0	0	9.0	0	9.0	0	9.0
10	76.2	70.6	0	25.7	0	13.5	0	13.5	0	13.5	0	13.5
11	78.9	71.8	0	27.8	0	15.6	0	15.6	0	15.6	0	15.6
12	81.4	73.0	0	30.3	0	18.2	0	18.2	0	18.2	0	18.2
13	83.4	74.4	0	31.7	0	20.2	0	20.2	0	20.2	0	20.2
14	84.8	74.8	0	33.0	0	21.4	0	21.4	0	21.4	0	21.4
15	85.2	75.0	0	34.9	0	23.3	0	23.3	0	23.3	0	23.3
16	85.1	75.0	0	35.9	0	23.9	0	23.9	0	23.9	0	23.9
17	84.6	74.7	0	35.9	0	23.3	0	23.3	0	23.3	0	23.3
18	83.8	74.6	0	35.9	0	22.9	0	22.9	0	22.9	0	22.9
19	82.7	74.6	0	34.9	0	21.3	0	21.3	0	21.3	0	21.3
20	81.4	74.4	0	25.6	0	17.8	0	17.8	0	17.8	0	17.8
21	79.9	74.9	0	22.2	0	15.9	0	15.9	0	15.9	0	15.9
22	78.4	74.0	0	19.8	0	13.8	0	13.8	0	13.8	0	13.8
23	76.8	72.7	0	18.1	0	11.2	0	11.2	0	11.2	0	11.2
24	75.2	71.6	0	16.6	0	8.8	0	8.8	0	8.8	0	8.8

August			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	17.3	0	6.9	0	9.1	0	9.1	0	9.1
2	73.2	70.3	0	13.9	0	5.7	0	6.4	0	6.4	0	6.4
3	71.7	68.9	0	12.2	0	4.9	0	5.1	0	5.1	0	5.1
4	70.4	67.8	0	10.9	0	3.2	0	3.3	0	3.3	0	3.3
5	69.5	66.8	0	10.3	0	2.5	0	2.5	0	2.5	0	2.5
6	68.9	66.4	0	10.2	0	1.4	0	1.4	0	1.4	0	1.4
7	68.7	66.4	0	11.4	0	1.7	0	1.7	0	1.7	0	1.7
8	69.2	66.8	0	15.9	0	3.8	0	3.8	0	3.8	0	3.8
9	70.8	67.7	0	20.9	0	6.2	0	6.3	0	6.3	0	6.3
10	73.2	67.7	0	24.6	0	9.2	0	9.2	0	9.2	0	9.2
11	76.2	68.8	0	27.7	0	11.9	0	12.0	0	12.0	0	12.0
12	79.3	70.3	0	29.3	0	14.3	0	14.3	0	14.3	0	14.3
13	82.3	72.2	0	30.6	0	16.3	0	16.3	0	16.3	0	16.3
14	84.7	73.7	0	33.4	0	19.3	0	19.3	0	19.3	0	19.3
15	86.3	74.6	0	35.4	0	23.0	0	23.0	0	23.0	0	23.0
16	86.8	75.1	0	35.9	0	24.1	0	24.1	0	24.1	0	24.1
17	86.6	75.1	0	35.9	0	24.2	0	24.2	0	24.2	0	24.2
18	86.0	75.3	0	35.9	0	24.8	0	24.8	0	24.8	0	24.8
19	85.1	76.0	0	30.9	0	22.0	0	22.0	0	22.0	0	22.0
20	83.8	76.8	0	24.4	0	19.5	0	19.5	0	19.5	0	19.5
21	82.3	77.2	0	22.1	0	18.2	0	18.2	0	18.2	0	18.2
22	80.6	76.3	0	19.7	0	16.8	0	16.8	0	16.8	0	16.8
23	78.7	75.3	0	17.5	0	14.3	0	14.3	0	14.3	0	14.3
24	76.8	73.7	0	16.0	0	11.3	0	11.3	0	11.3	0	11.3

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

September			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	9.1	0	0.9	0	1.5	0	1.5	0	1.5
2	67.6	65.0	0	6.7	-7,919	0.0	-7,919	0.0	-7,919	0.0	-7,919	0.0
3	65.8	63.4	0	5.3	-20,523	0.0	-20,523	0.0	-20,523	0.0	-20,523	0.0
4	64.3	62.2	0	4.6	-34,008	0.0	-34,008	0.0	-34,008	0.0	-34,008	0.0
5	63.1	61.1	0	4.3	-3,184	0.0	-3,184	0.0	-3,184	0.0	-3,184	0.0
6	62.4	60.3	0	3.8	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	4.2	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	7.9	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	12.2	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	16.0	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	18.6	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	20.5	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	21.9	0	9.2	0	9.2	0	9.2	0	9.2
14	81.2	68.4	0	23.9	0	11.4	0	11.4	0	11.4	0	11.4
15	83.0	70.0	0	25.9	0	13.2	0	13.2	0	13.2	0	13.2
16	83.7	70.5	0	27.4	0	14.6	0	14.6	0	14.6	0	14.6
17	83.4	70.5	0	27.3	0	15.0	0	15.0	0	15.0	0	15.0
18	82.8	70.9	0	24.9	0	14.0	0	14.1	0	14.1	0	14.1
19	81.6	72.7	0	20.1	0	12.0	0	12.1	0	12.1	0	12.1
20	80.1	74.7	0	16.7	0	11.7	0	11.7	0	11.7	0	11.7
21	78.3	74.1	0	13.7	0	10.0	0	10.0	0	10.0	0	10.0
22	76.3	72.4	0	11.6	0	8.0	0	8.0	0	8.0	0	8.0
23	74.1	70.7	0	10.0	0	5.7	0	5.7	0	5.7	0	5.7
24	71.8	68.9	0	8.7	0	3.1	0	3.1	0	3.1	0	3.1

October			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	-118,952	0.0	-118,952	0.0	-118,952	0.0
2	50.1	48.6	0	0.0	0	0.0	-131,108	0.0	-131,108	0.0	-131,108	0.0
3	48.4	46.9	0	0.0	0	0.0	-145,075	0.0	-145,075	0.0	-145,075	0.0
4	47.1	45.8	0	0.0	-13,529	0.0	-153,902	0.0	-153,902	0.0	-153,902	0.0
5	46.3	44.8	0	0.0	-165,099	0.0	-165,099	0.0	-165,099	0.0	-165,099	0.0
6	46.0	44.5	0	0.0	-176,310	0.0	-176,310	0.0	-176,310	0.0	-176,310	0.0
7	46.8	45.3	0	0.0	-172,120	0.0	-172,120	0.0	-172,120	0.0	-172,120	0.0
8	48.9	47.5	-49,076	0.0	-143,556	0.0	-143,556	0.0	-143,556	0.0	-143,556	0.0
9	52.2	49.9	-5,220	0.0	-113,283	0.0	-113,283	0.0	-113,283	0.0	-113,283	0.0
10	56.2	52.5	0	0.0	-80,330	0.0	-80,330	0.0	-80,330	0.0	-80,330	0.0
11	60.4	54.4	0	0.0	-47,610	0.0	-47,610	0.0	-47,610	0.0	-47,610	0.0
12	64.4	56.0	0	0.0	-23,134	0.0	-23,134	0.0	-23,134	0.0	-23,134	0.0
13	67.7	57.3	0	0.0	-8,322	0.0	-8,322	0.0	-8,322	0.0	-8,322	0.0
14	69.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	2.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	12.6	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	8.2	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	4.5	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	-16,278	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.0	-39,903	0.0	-39,903	0.0	-39,903	0.0	-39,903	0.0
23	57.0	55.1	0	0.0	-87,156	0.0	-87,156	0.0	-87,156	0.0	-87,156	0.0
24	54.5	52.7	0	0.0	-100,733	0.0	-100,733	0.0	-100,733	0.0	-100,733	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

November			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-105,777	0.0	0	0.0	-133,336	0.0	-133,336	0.0	-133,336	0.0
2	49.4	47.3	-116,631	0.0	0	0.0	-151,947	0.0	-151,947	0.0	-151,947	0.0
3	47.2	45.3	-130,899	0.0	-138,164	0.0	-168,659	0.0	-168,659	0.0	-168,659	0.0
4	45.3	43.4	-138,149	0.0	-179,389	0.0	-179,389	0.0	-179,389	0.0	-179,389	0.0
5	43.9	42.2	-146,719	0.0	-191,096	0.0	-191,096	0.0	-191,096	0.0	-191,096	0.0
6	43.0	41.4	-145,622	0.0	-201,724	0.0	-201,724	0.0	-201,724	0.0	-201,724	0.0
7	42.7	41.2	-139,282	0.0	-204,576	0.0	-204,576	0.0	-204,576	0.0	-204,576	0.0
8	43.5	42.0	-112,942	0.0	-198,290	0.0	-198,290	0.0	-198,290	0.0	-198,290	0.0
9	45.9	44.0	-62,781	0.0	-171,084	0.0	-171,084	0.0	-171,084	0.0	-171,084	0.0
10	49.4	46.6	-13,116	0.0	-140,393	0.0	-140,393	0.0	-140,393	0.0	-140,393	0.0
11	53.8	48.6	0	0.0	-118,050	0.0	-118,050	0.0	-118,050	0.0	-118,050	0.0
12	58.4	50.6	0	0.0	-88,248	0.0	-88,248	0.0	-88,248	0.0	-88,248	0.0
13	62.8	52.6	0	0.0	-64,905	0.0	-64,905	0.0	-64,905	0.0	-64,905	0.0
14	66.3	54.5	0	0.0	-35,687	0.0	-35,687	0.0	-35,687	0.0	-35,687	0.0
15	68.7	55.7	0	0.0	-13,636	0.0	-13,636	0.0	-13,636	0.0	-13,636	0.0
16	69.5	56.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	0.0	-14,513	0.0	-14,513	0.0	-14,513	0.0	-14,513	0.0
19	66.9	59.4	0	0.0	-36,106	0.0	-36,106	0.0	-36,106	0.0	-36,106	0.0
20	65.0	59.4	0	0.0	-51,994	0.0	-51,994	0.0	-51,994	0.0	-51,994	0.0
21	62.8	58.2	0	0.0	-67,243	0.0	-67,243	0.0	-67,243	0.0	-67,243	0.0
22	60.2	56.1	0	0.0	-87,739	0.0	-87,739	0.0	-87,739	0.0	-87,739	0.0
23	57.5	54.0	0	0.0	-100,585	0.0	-100,585	0.0	-100,585	0.0	-100,585	0.0
24	54.7	51.7	0	0.0	-120,540	0.0	-120,540	0.0	-120,540	0.0	-120,540	0.0

December			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-160,915	0.0	-206,846	0.0	-206,844	0.0	-206,844	0.0	-206,844	0.0
2	43.2	41.1	-169,873	0.0	-222,614	0.0	-222,614	0.0	-222,614	0.0	-222,614	0.0
3	41.8	39.8	-177,305	0.0	-228,896	0.0	-228,896	0.0	-228,896	0.0	-228,896	0.0
4	40.7	38.7	-187,699	0.0	-239,474	0.0	-239,474	0.0	-239,474	0.0	-239,474	0.0
5	40.1	38.4	-191,168	0.0	-242,723	0.0	-242,723	0.0	-242,723	0.0	-242,723	0.0
6	39.9	38.4	-189,956	0.0	-245,227	0.0	-245,227	0.0	-245,227	0.0	-245,227	0.0
7	40.5	39.0	-185,775	0.0	-250,912	0.0	-250,912	0.0	-250,912	0.0	-250,912	0.0
8	42.2	40.7	-175,919	0.0	-239,110	0.0	-239,110	0.0	-239,110	0.0	-239,110	0.0
9	44.9	43.4	-134,115	0.0	-212,418	0.0	-212,418	0.0	-212,418	0.0	-212,418	0.0
10	48.2	45.8	-89,120	0.0	-182,249	0.0	-182,249	0.0	-182,249	0.0	-182,249	0.0
11	51.7	48.3	-51,211	0.0	-160,039	0.0	-160,039	0.0	-160,039	0.0	-160,039	0.0
12	55.0	50.7	-25,956	0.0	-137,649	0.0	-137,649	0.0	-137,649	0.0	-137,649	0.0
13	57.7	52.0	-13,348	0.0	-121,574	0.0	-121,574	0.0	-121,574	0.0	-121,574	0.0
14	59.5	52.6	0	0.0	-108,023	0.0	-108,023	0.0	-108,023	0.0	-108,023	0.0
15	60.1	52.7	0	0.0	-92,731	0.0	-92,731	0.0	-92,731	0.0	-92,731	0.0
16	59.9	52.6	0	0.0	-82,814	0.0	-82,814	0.0	-82,814	0.0	-82,814	0.0
17	59.2	52.1	0	0.0	-88,321	0.0	-88,321	0.0	-88,321	0.0	-88,321	0.0
18	58.2	51.8	0	0.0	-105,971	0.0	-105,971	0.0	-105,971	0.0	-105,971	0.0
19	56.8	52.2	0	0.0	-121,355	0.0	-121,355	0.0	-121,355	0.0	-121,355	0.0
20	55.0	51.4	-32,831	0.0	-136,357	0.0	-136,357	0.0	-136,357	0.0	-136,357	0.0
21	53.1	50.1	-96,892	0.0	-148,215	0.0	-148,215	0.0	-148,215	0.0	-148,215	0.0
22	51.0	48.1	-120,497	0.0	-166,688	0.0	-166,688	0.0	-166,688	0.0	-166,688	0.0
23	48.9	46.2	-135,284	0.0	-180,025	0.0	-180,025	0.0	-180,025	0.0	-180,025	0.0
24	46.9	44.1	-146,481	0.0	-195,443	0.0	-195,443	0.0	-195,443	0.0	-195,443	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 24404 (2 BUILDINGS)

-----CARD 08-- Climatic Information --

Weather Code	Summer Clearness Number	Winter Clearness Number	Summer Design Dry Bulb	Summer Design Wet Bulb	Winter Design Dry Bulb	Building Orientation	Summer Ground Reflect	Winter Ground Reflect
AUGUSTA						90		

-----CARD 09-- Load Simulation Periods--

1st Month Cooling Simulation	Last Month Cooling Simulation	Peak Cooling Load Hr	1st Month Summer Period	Last Month Summer Period	1st Month Daylight Savings	Last Month Daylight Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters----------------------------

Cooling Load Method	Heating Load Method	Ventilation Method	Airflow Input Units	Airflow Output Units	Room Circulation Rate	Put Wall RA Load to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

--------------------- Load Section Alternative #1 ---------------------

---- Load Alternative ----
Number	Description
1	ENLISTED BARRACKS

-----CARD 20-- General Room Parameters --

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
1	1	ALL THREE FLOORS	14103		2	0		10	3		

-----CARD 21-- Thermostat Parameters --

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters --

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				5			

-----CARD 24-- Wall Parameters --

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	277	9.5		7	0			
1	2	50.75	9.5		7	90			
1	3	277	9.55		7	180			
1	4	50.75	9.5		7	270			

-----CARD 25-- Wall/Glass Parameters --

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	31.7	10	1	1.03	.82					
1	3	31	10	1	1.03	.82					

-----CARD 26-- Schedules --

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights --

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting ---- Reference Point 1	Reference Point 2
1	70	PEOPLE	255	325	1	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment --

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	REFRIG	7	KW	FGHEAT						
1	2	DRYER	17	KW	FGHEAT						
1	3	WASHER	.3	KW	FGHEAT						
1	4	MISS	1	KW	FGHEAT						

-----CARD 29--- Room Airflows ---

Room Number	Ventilation Cooling Value	Cooling Units	Heating Value	Heating Units	Infiltration Cooling Value	Cooling Units	Heating Value	Heating Units	Reheat Minimum Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.10	CFM-SF		

-----CARD 30- Fan Airflows ---

Room Number	Main Cooling Value	Cooling Units	Heating Value	Heating Units	Auxiliary Cooling Value	Cooling Units	Heating Value	Heating Units	Room Exhaust Value	Units
	1	CFM-SF	1	CFM-SF						

--------------------- System Section Alternative #1 ---------------------

-----CARD 39-- System Alternative -----

Number	Description
1	FAN COILS SYSTEM

-----CARD 40--- System Type ---

System Set Number	System Type	Ventil Deck Location	OPTIONAL VENTILATION SYSTEM Cooling SADBVh	Heating SADBVh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	FC						

-----CARD 41-- Zone Assignment --

System Set Number	Ref #1 Begin	End	Ref #2 Begin	End	Ref #3 Begin	End	Ref #4 Begin	End	Ref #5 Begin	End	Ref #6 Begin	End
	1	1										

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-----CARD 42--- Fan SP and Duct Parameters-------------------------------------------------
System Cool  Heat  Return Mn Exh Aux  Rm Exh Cool    Return  Supply Supply Return
Set    Fan   Fan   Fan    Fan    Fan  Fan    Fan Mtr Fan Mtr Duct   Duct   Air
Number SP    SP    SP     SP     SP   SP     Loc     Loc     Ht Gn  Loc    Path
1
```

Utility Description Reference Table

    Schedules:
        CLGCONST SAMPLE COOLING TSTAT SCHEDULE
        FGHEAT   SCHD FOR HEAT LOAD CALCS
        HTGCONST SAMPLE HEATING TSTAT SCHEDULE
        YES AVAILABLE (100%)
    System:
        FC   (Utility file not found)

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Temperature
----   ------------
   0   75
  24

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
   0   0
  24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
   0   0
  24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Temperature
---- ------------
   0   72
  24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
   0   100
  24

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****************************************************************
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**                                                          **
**              T R A C E   6 0 0   A N A L Y S I S          **
**                                                          **
**              by              **                          **
**                                                          **
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ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 24402 (1 BUILDING)

Weather File Code:	AUGUSTA
Location:	FORT GORDON, GEORGIA
Latitude:	33.0 (deg)
Longitude:	82.0 (deg)
Time Zone:	5
Elevation:	143 (ft)
Barometric Pressure:	29.8 (in. Hg)

Summer Clearness Number:	0.90
Winter Clearness Number:	0.90
Summer Design Dry Bulb:	95 (F)
Summer Design Wet Bulb:	76 (F)
Winter Design Dry Bulb:	23 (F)
Summer Ground Relectance:	0.20
Winter Ground Relectance:	0.20

Air Density:	0.0756	(Lbm/cuft)
Air Specific Heat:	0.2444	(Btu/lbm/F)
Density-Specific Heat Prod:	1.1094	(Btu-min./hr/cuft/F)
Latent Heat Factor:	4,883.6	(Btu-min./hr/cuft)
Enthalpy Factor:	4.5387	(Lb-min./hr/cuft)

Design Simulation Period: April   To October
System Simulation Period: January   To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 15:25:10   8/25/94
Dataset Name: FGTYPS32 .TM

System   1   Peak   SZ   - SINGLE ZONE

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************************* COOLING COIL PEAK ************************* CLG SPACE PEAK ************ HEATING COIL PEAK ********
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						*			*			
Peaked at Time ==) | | Mo/Hr: 8/16 | | | | * | Mo/Hr: 6/17 | | * | | Mo/Hr: 13/ 1 | |
Outside Air ==) | | OADB/WB/HR: 96/ 76/105.0 | | | | * | OADB: 98 | | * | | OADB: 23 | |

	Space Sens.+Lat. (Btuh)	Ret. Air Sensible (Btuh)	Ret. Air Latent (Btuh)	Net Total (Btuh)	Percnt Of Tot (%)	*	Space Sensible (Btuh)	Percnt Of Tot (%)	*	Space Peak Space Sens (Btuh)	Coil Peak Tot Sens (Btuh)	Percnt Of Tot (%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	29,719	0		29,719	18.74	*	31,996	34.93	*	-18,295	-18,295	11.31
Glass Solar	34,768	0		34,768	21.93	*	35,368	38.61	*	0	0	0.00
Glass Cond	6,429	0		6,429	4.05	*	7,286	7.95	*	-15,562	-15,562	9.62
Wall Cond	7,681	0		7,681	4.84	*	8,654	9.45	*	-15,639	-15,639	9.67
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	11,889			11,889	7.50	*	8,294	9.05	*	-20,110	-20,110	12.44
Sub Total==)	90,486	0		90,486	57.07	*	91,597	100.00	*	-69,606	-69,606	43.04
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	68,072	42.93	*	0	0.00	*	0	-92,110	56.96
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==)	90,486	0	0	158,558	100.00	*	91,597	100.00	*	-69,606	-161,716	100.00

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-----------------------------------COOLING COIL SELECTION-----------------------------------   --------------AREAS--------------
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	Total Capacity (Tons)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR Deg F	Deg F	Grains	Leaving DB/WB/HR Deg F	Deg F	Grains		Gross Total	Glass (sf)	(%)
Main Clg	13.2	158.6	129.3	10,520	78.7	68.5	89.1	67.2	64.2	86.0	Floor	10,520	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0	
Totals	13.2	158.6									Roof	11,076	0	0
											Wall	4,028	599	15

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------------HEATING COIL SELECTION-------------   --------AIRFLOWS (cfm)--------   --ENGINEERING CHECKS--   --TEMPERATURES (F)---
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	Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating				Type	Clg	Htg
								Clg % OA	17.5				
Main Htg	-161.7	10,520	60.1	74.0	Vent	1,845	1,845	Clg Cfm/Sqft	1.00	SADB	67.2	74.0
Aux Htg	0.0	0	0.0	0.0	Infil	322	403	Clg Cfm/Ton	796.17	Plenum	75.0	68.0
Preheat	-82.2	10,520	60.1	67.2	Supply	10,520	10,520	Clg Sqft/Ton	796.17	Return	75.0	68.0
Reheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Btuh/Sqft	15.07	Ret/OA	78.7	60.1
Humidif	0.0	0	0.0	0.0	Return	10,520	10,520	No. People	123	Runarnd	75.0	68.0
Opt Vent	0.0	0	0.0	0.0	Exhaust	1,845	1,845	Htg % OA	17.5	Fn MtrTD	0.0	0.0
Total	-161.7				Rm Exh	0	0	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
					Auxil	0	0	Htg Btuh/SqFt	-15.37	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONES

January			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	0	0.0	0	0.0	-57,977	0.0	-57,977	0.0	-57,977	0.0
2	32.9	30.7	0	0.0	0	0.0	-61,081	0.0	-61,081	0.0	-61,081	0.0
3	33.1	31.3	0	0.0	0	0.0	-61,987	0.0	-61,987	0.0	-61,987	0.0
4	33.9	32.1	0	0.0	0	0.0	-60,550	0.0	-60,550	0.0	-60,550	0.0
5	35.2	33.5	0	0.0	0	0.0	-58,803	0.0	-58,803	0.0	-58,803	0.0
6	37.0	35.4	0	0.0	-3,020	0.0	-55,201	0.0	-55,201	0.0	-55,201	0.0
7	39.0	37.6	0	0.0	-50,337	0.0	-50,336	0.0	-50,336	0.0	-50,336	0.0
8	41.3	40.1	0	0.0	-45,106	0.0	-45,106	0.0	-45,106	0.0	-45,106	0.0
9	43.7	42.5	0	0.0	-33,596	0.0	-33,596	0.0	-33,596	0.0	-33,596	0.0
10	46.1	44.0	0	0.0	-22,770	0.0	-22,770	0.0	-22,770	0.0	-22,770	0.0
11	48.4	45.0	0	0.0	-10,338	0.0	-10,338	0.0	-10,338	0.0	-10,338	0.0
12	50.5	45.6	0	0.0	-1,347	0.0	-1,347	0.0	-1,347	0.0	-1,347	0.0
13	52.2	46.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	53.5	46.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	54.3	46.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	54.6	46.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	54.0	45.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	52.5	45.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	50.1	44.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	47.1	43.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	43.7	40.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	40.4	37.3	0	0.0	-879	0.0	-879	0.0	-879	0.0	-879	0.0
23	37.3	34.9	0	0.0	-43,764	0.0	-43,764	0.0	-43,764	0.0	-43,764	0.0
24	34.9	32.6	0	0.0	-51,915	0.0	-51,915	0.0	-51,915	0.0	-51,915	0.0

February			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-16,891	0.0	0	0.0	-25,416	0.0	-25,416	0.0	-25,416	0.0
2	39.7	37.1	-22,206	0.0	0	0.0	-40,446	0.0	-40,446	0.0	-40,446	0.0
3	37.8	35.1	-26,101	0.0	0	0.0	-46,497	0.0	-46,497	0.0	-46,497	0.0
4	36.3	33.8	-29,570	0.0	0	0.0	-51,452	0.0	-51,452	0.0	-51,452	0.0
5	35.1	32.6	-31,608	0.0	0	0.0	-56,379	0.0	-56,379	0.0	-56,379	0.0
6	34.4	32.0	-32,289	0.0	0	0.0	-58,355	0.0	-58,355	0.0	-58,355	0.0
7	34.1	31.9	-30,281	0.0	-55,378	0.0	-60,837	0.0	-60,837	0.0	-60,837	0.0
8	34.6	32.4	-23,550	0.0	-58,953	0.0	-58,953	0.0	-58,953	0.0	-58,953	0.0
9	36.0	33.8	-6,455	0.0	-49,903	0.0	-49,903	0.0	-49,903	0.0	-49,903	0.0
10	38.2	34.7	0	0.0	-39,008	0.0	-39,008	0.0	-39,008	0.0	-39,008	0.0
11	40.9	36.2	0	0.0	-27,003	0.0	-27,003	0.0	-27,003	0.0	-27,003	0.0
12	43.9	37.4	0	0.0	-16,760	0.0	-16,760	0.0	-16,760	0.0	-16,760	0.0
13	46.9	39.4	0	0.0	-4,774	0.0	-4,774	0.0	-4,774	0.0	-4,774	0.0
14	49.7	41.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	51.8	42.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	53.2	43.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	53.7	44.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	53.4	44.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	52.7	44.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	51.5	45.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	50.0	44.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	48.1	43.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	46.1	41.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	43.9	40.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONES

March			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	48.7	44.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	46.6	42.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	44.9	41.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	43.9	40.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	43.5	40.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	44.0	41.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	45.4	42.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	47.7	44.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10	50.6	45.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	53.9	47.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	57.4	49.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	60.7	50.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	63.6	52.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	65.9	53.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	67.3	54.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.1	51.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.2	49.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

April			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2	51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	53.5	50.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	53.2	51.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	53.9	51.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	55.9	52.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10	58.9	53.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	62.6	55.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	66.5	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	75.6	62.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	74.9	61.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	73.7	62.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	72.1	62.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	70.2	63.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	68.0	62.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	65.7	60.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONES

May			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	65.7	61.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	63.6	59.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	81.9	65.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	84.1	66.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	84.9	67.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	84.6	67.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	83.8	67.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	82.4	67.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	80.6	68.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	78.5	71.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	76.1	69.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	73.4	68.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	70.8	65.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

June			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	72.6	68.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	70.9	67.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	69.6	66.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	68.7	65.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	68.5	65.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	69.0	66.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	70.6	66.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	73.0	67.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10	76.1	68.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	79.5	69.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	82.9	70.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	86.0	71.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	88.4	72.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	90.0	74.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	90.5	73.7	0	7.7	0	0.0	0	0.0	0	0.0	0	0.0
17	90.3	74.2	0	7.9	0	0.0	0	0.0	0	0.0	0	0.0
18	89.4	73.9	0	7.1	0	0.0	0	0.0	0	0.0	0	0.0
19	88.1	74.5	0	5.8	0	0.0	0	0.0	0	0.0	0	0.0
20	86.4	75.3	0	3.9	0	0.0	0	0.0	0	0.0	0	0.0
21	84.3	76.5	0	2.5	0	0.0	0	0.0	0	0.0	0	0.0
22	81.9	75.7	0	1.2	0	0.0	0	0.0	0	0.0	0	0.0
23	79.5	74.0	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
24	77.0	72.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONES

July			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	72.4	69.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	71.3	68.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	70.5	67.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	70.0	67.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	69.9	67.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	71.7	69.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	73.7	69.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10	76.2	70.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	78.9	71.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	81.4	73.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	83.4	74.4	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0
14	84.8	74.8	0	6.7	0	0.0	0	0.0	0	0.0	0	0.0
15	85.2	75.0	0	7.1	0	0.0	0	0.0	0	0.0	0	0.0
16	85.1	75.0	0	7.3	0	0.0	0	0.0	0	0.0	0	0.0
17	84.6	74.7	0	7.3	0	0.0	0	0.0	0	0.0	0	0.0
18	83.8	74.6	0	6.6	0	0.0	0	0.0	0	0.0	0	0.0
19	82.7	74.6	0	5.3	0	0.0	0	0.0	0	0.0	0	0.0
20	81.4	74.4	0	3.5	0	0.0	0	0.0	0	0.0	0	0.0
21	79.9	74.9	0	2.2	0	0.0	0	0.0	0	0.0	0	0.0
22	78.4	74.0	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
23	76.8	72.7	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
24	75.2	71.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

August			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	73.2	70.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	71.7	68.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	70.4	67.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	69.5	66.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	68.9	66.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	68.7	66.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	69.2	66.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	70.8	67.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10	73.2	67.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	76.2	68.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	79.3	70.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	82.3	72.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	84.7	73.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	86.3	74.6	0	5.7	0	0.0	0	0.0	0	0.0	0	0.0
16	86.8	75.1	0	8.1	0	0.0	0	0.0	0	0.0	0	0.0
17	86.6	75.1	0	7.4	0	0.0	0	0.0	0	0.0	0	0.0
18	86.0	75.3	0	6.5	0	0.0	0	0.0	0	0.0	0	0.0
19	85.1	76.0	0	5.0	0	0.0	0	0.0	0	0.0	0	0.0
20	83.8	76.8	0	3.3	0	0.0	0	0.0	0	0.0	0	0.0
21	82.3	77.2	0	2.0	0	0.0	0	0.0	0	0.0	0	0.0
22	80.6	76.3	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
23	78.7	75.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	76.8	73.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONES

September			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	67.6	65.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	81.2	68.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	83.0	70.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	83.7	70.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	83.4	70.5	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
18	82.8	70.9	0	4.2	0	0.0	0	0.0	0	0.0	0	0.0
19	81.6	72.7	0	2.5	0	0.0	0	0.0	0	0.0	0	0.0
20	80.1	74.7	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
21	78.3	74.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	76.3	72.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	74.1	70.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	71.8	68.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

October			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	50.1	48.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	48.4	46.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	47.1	45.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	46.3	44.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	46.0	44.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	46.8	45.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	48.9	47.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	52.2	49.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10	56.2	52.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	60.4	54.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	64.4	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	67.7	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.5	52.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONES

November			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	49.4	47.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	47.2	45.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	45.3	43.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	43.9	42.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	43.0	41.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	42.7	41.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	43.5	42.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	45.9	44.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10	49.4	46.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	53.8	48.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	58.4	50.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	62.8	52.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	66.3	54.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	68.7	55.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2	56.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.5	54.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.7	51.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

December			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	43.2	41.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	41.8	39.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	40.7	38.7	0	0.0	0	0.0	0	0.0	-3,629	0.0	-3,629	0.0
5	40.1	38.4	0	0.0	0	0.0	-3,749	0.0	-40,226	0.0	-40,226	0.0
6	39.9	38.4	0	0.0	0	0.0	-41,716	0.0	-41,716	0.0	-41,716	0.0
7	40.5	39.0	0	0.0	0	0.0	-41,238	0.0	-41,238	0.0	-41,238	0.0
8	42.2	40.7	0	0.0	0	0.0	-37,630	0.0	-37,630	0.0	-37,630	0.0
9	44.9	43.4	0	0.0	0	0.0	-26,654	0.0	-26,654	0.0	-26,654	0.0
10	48.2	45.8	0	0.0	0	0.0	-12,389	0.0	-12,389	0.0	-12,389	0.0
11	51.7	48.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	55.0	50.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	57.7	52.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	59.5	52.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	60.1	52.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	59.9	52.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	59.2	52.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	58.2	51.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	56.8	52.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	55.0	51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	53.1	50.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	51.0	48.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	48.9	46.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	46.9	44.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 24402 (1 BUILDING)

-----CARD 08-- Climatic Information ---

Weather Code	Summer Clearness Number	Winter Clearness Number	Summer Design Dry Bulb	Summer Design Wet Bulb	Winter Design Dry Bulb	Building Orientation	Summer Ground Reflect	Winter Ground Reflect
AUGUSTA						90		

-----CARD 09-- Load Simulation Periods--

1st Month Cooling Simulation	Last Month Cooling Simulation	Peak Cooling Load Hr	1st Month Summer Period	Last Month Summer Period	1st Month Daylight Savings	Last Month Daylight Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters----------------------------

Cooling Load Method	Heating Load Method	Ventilation Method	Airflow Input Units	Airflow Output Units	Room Circulation Rate	Put Wall RA Load to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

--------------------- Load Section Alternative #1 ---------------------

---- Load Alternative ----
Number	Description
1	BATTALION H. Q.

-----CARD 20-- General Room Parameters --

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
1	1	MAIN ROOM	10520		2	0					

-----CARD 21-- Thermostat Parameters --

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50							LIGHT30	NO

-----CARD 22-- Roof Parameters --

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1		142	39		4	0	59	
1	2		142	39		4	180	59	

-----CARD 24-- Wall Parameters ---

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	142	9.5		3	0			
1	2	70	9.5		3	90			
	3	142	9.5		3	180			
	4	70	9.5		3	270			

-----CARD 25-- Wall/Glass Parameters ---

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	22.7	9.5	1	.55	.82					
1	2	13.2	9.5	1	.55	.82					
1	3	24.4	9.5	1	.55	.82					
1	4	2.8	9.5	1	.55	.82					

-----CARD 26-- Schedules --

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights --

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	Daylighting Reference Point 1	Reference Point 2
1	123	PEOPLE	255	325	1.7	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment --

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	P.C.	19.2	KW	FGHEAT						
1	2	PRINTER	1.9	KW	FGHEAT						
1	3	REFRIG	1.2	KW	FGHEAT						
1	4	MICROWAVE\MIS	5.2	KW	FGHEAT						
1	5	COFFEE POT	1000	BTUH	FGHEAT						
1	6	TELEVISION	.3	KW	FGHEAT						
1	7	EWH	4.5	KW	FGHEAT						

-----CARD 29--- Room Airflows --

	--------------Ventilation-------------				-------------Infiltration------------				--Reheat Minimum--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----			
Room Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows ---

	---------------Main--------------				------------Auxiliary-----------				--Room Exhaust--	
	----Cooling----		----Heating----		----Cooling----		----Heating----			
Room Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	1	CFM-SF	1	CFM-SF						

-------------------- System Section Alternative #1 ---------------------

-----CARD 39-- System Alternative -----

Number	Description
1	SINGLE ZONES

-----CARD 40--- System Type --

		------------OPTIONAL VENTILATION SYSTEM------------				
System Set Number	System Type	Ventil Deck Location	Cooling SADBVh	Heating SADBVh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	SZ					

-----CARD 41-- Zone Assignment --

System Set Number	Ref #1		Ref #2		Ref #3		Ref #4		Ref #5		Ref #6	
	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
1	1	1										

```
-----CARD 42--- Fan SP and Duct Parameters--------------------------------------------------------
System Cool Heat Return Mn Exh Aux  Rm Exh Cool     Return   Supply Supply Return
Set    Fan  Fan  Fan    Fan    Fan  Fan    Fan Mtr  Fan Mtr  Duct   Duct   Air
Number SP   SP   SP     SP     SP   SP     Loc      Loc      Ht Gn  Loc    Path
1
```

Utility Description Reference Table

     Schedules:
          FGHEAT   SCHD FOR HEAT LOAD CALCS
          YES   AVAILABLE (100%)
     System:
          SZ   SINGLE ZONE

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Util Percent
----   ------------
  0   0
 24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Util Percent
----   ------------
  0   0
 24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Util Percent
----   ------------
  0   100
 24

```
******************************************************************************
******************************************************************************
**                                                                          **
**              T R A C E   6 0 0   A N A L Y S I S                          **
**                                                                          **
**              by              **                                          **
**                                                                          **
******************************************************************************
******************************************************************************
```

ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 24410 (5 BUILDINGS)

Weather File Code:	AUGUSTA
Location:	FORT GORDON, GEORGIA
Latitude:	33.0 (deg)
Longitude:	82.0 (deg)
Time Zone:	5
Elevation:	143 (ft)
Barometric Pressure:	29.8 (in. Hg)

Summer Clearness Number:	0.90
Winter Clearness Number:	0.90
Summer Design Dry Bulb:	95 (F)
Summer Design Wet Bulb:	76 (F)
Winter Design Dry Bulb:	23 (F)
Summer Ground Relectance:	0.20
Winter Ground Relectance:	0.20

Air Density:	0.0756 (Lbm/cuft)
Air Specific Heat:	0.2444 (Btu/lbm/F)
Density-Specific Heat Prod:	1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor:	4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor:	4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April   To October
System Simulation Period: January   To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 18:17:48   8/16/94
Dataset Name: FGTYPS33 .TM

System   1   Block   MZ   - MULTIZONE

```
*************************** COOLING COIL PEAK ***************************** CLG SPACE PEAK ************ HEATING COIL PEAK ********
Peaked at Time ==)            Mo/Hr:  8/16                          *    Mo/Hr:  6/17    *        Mo/Hr: 13/ 1
Outside Air ==)            OADB/WB/HR:  96/ 76/105.0                *    OADB:  98       *        OADB:  23
                                                                   *                    *
                                                                   *                    *
                   Space    Ret. Air   Ret. Air     Net   Percnt  *    Space    Percnt  *  Space Peak   Coil Peak   Percnt
                 Sens.+Lat. Sensible   Latent      Total  Of Tot  *  Sensible   Of Tot  *  Space Sens   Tot Sens    Of Tot
Envelope Loads    (Btuh)    (Btuh)     (Btuh)      (Btuh)   (%)   *   (Btuh)      (%)    *   (Btuh)       (Btuh)       (%)
  Skylite Solr      0         0                      0     0.00   *     0         0.00   *     0             0        0.00
  Skylite Cond      0         0                      0     0.00   *     0         0.00   *     0             0        0.00
  Roof Cond         0       7,415                  7,415  16.86   *     0         0.00   *     0         -4,084      10.58
  Glass Solar    10,584       0                   10,584  24.07   *  11,880      43.04   *     0             0        0.00
  Glass Cond      2,136       0                    2,136   4.86   *   2,421       8.77   *  -5,149        -5,149     13.34
  Wall Cond       1,854     1,204                  3,058   6.95   *   2,266       8.21   *  -4,302        -7,367     19.09
  Partition         0                                0     0.00   *     0         0.00   *     0             0        0.00
  Exposed Floor     0                                0     0.00   *     0         0.00   *     0             0        0.00
  Infiltration    7,637                            7,637  17.37   *   4,660      16.88   * -11,298       -11,298     29.27
  Sub Total==)   22,212     8,619                 30,831  70.12   *  21,227      76.89   * -20,749       -27,899     72.28
Internal Loads                                                     *                    *
  Lights            0         0                      0     0.00   *     0         0.00   *     0             0        0.00
  People            0                                0     0.00   *     0         0.00   *     0             0        0.00
  Misc             631        0         0          631    1.44   *    631        2.29   *     0             0        0.00
  Sub Total==)     631        0         0          631    1.44   *    631        2.29   *     0             0        0.00
Ceiling Load      1,915    -1,915                    0     0.00   *   2,089       7.57   *  -1,588          0        0.00
Outside Air         0         0         0         9,491  21.59   *     0         0.00   *     0        -11,233      29.10
Sup. Fan Heat                                        0     0.00   *                0.00   *                   0        0.00
Ret. Fan Heat                 0                      0     0.00   *                0.00   *                   0        0.00
Duct Heat Pkup                0                      0     0.00   *                0.00   *                   0        0.00
OV/UNDR Sizing    3,658                           3,658   8.32   *   3,658      13.25   *     0             0        0.00
Exhaust Heat                -641        0          -641  -1.46   *                0.00   *                 532       -1.38
Terminal Bypass               0         0            0   -0.00   *                0.00   *                   0        0.00
                                                                   *                    *
Grand Total==)   28,416     6,063       0        43,970 100.00   *  27,605     100.00   * -22,337       -38,600    100.00
```

```
-------------------------------COOLING COIL SELECTION------------------------------   --------------AREAS--------------
            Total Capacity  Sens Cap.  Coil Airfl    Entering DB/WB/HR    Leaving DB/WB/HR    Gross Total    Glass (sf) (%)
            (Tons)  (Mbh)    (Mbh)      (cfm)     Deg F Deg F Grains   Deg F Deg F Grains  Floor    2,352
Main Clg     3.7    44.0      36.3      2,352     79.3  67.1  80.7    64.4  61.5  77.7    Part       600
Aux  Clg     0.0     0.0       0.0        0        0.0   0.0   0.0     0.0   0.0   0.0    ExFlr        0
Opt Vent     0.0     0.0       0.0        0        0.0   0.0   0.0     0.0   0.0   0.0    Roof     2,352            0     0
Totals       3.7    44.0                                                                 Wall     2,263          216    10
```

```
-----------HEATING COIL SELECTION------------   --------AIRFLOWS (cfm)--------   --ENGINEERING CHECKS--   --TEMPERATURES (F)---
         Capacity  Coil Airfl   Ent    Lvg      Type    Cooling  Heating   Clg % OA        9.6      Type     Clg   Htg
         (Mbh)     (cfm)      Deg F  Deg F      Vent      225      225     Clg Cfm/Sqft    1.00     SADB    64.4  76.6
Main Htg  -31.7    2,352      64.4   76.6       Infil     181      226     Clg Cfm/Ton   641.89     Plenum  77.6  65.9
Aux  Htg    0.0       0        0.0    0.0       Supply   2,352    2,352    Clg Sqft/Ton  641.89     Return  77.6  65.9
Preheat    -6.9    2,352      61.8   64.4       Mincfm      0        0     Clg Btuh/Sqft  18.69     Ret/OA  79.3  61.8
Reheat      0.0       0        0.0    0.0       Return   2,352    2,352    No. People       15      Runarnd 75.0  68.0
Humidif     0.0       0        0.0    0.0       Exhaust   225      225     Htg % OA        9.6      Fn MtrTD 0.0   0.0
Opt Vent    0.0       0        0.0    0.0       Rm Exh      0        0     Htg Cfm/SqFt    1.00     Fn BldTD 0.0   0.0
Total     -38.6                                 Auxil       0        0     Htg Btuh/SqFt -16.41     Fn Frict 0.0   0.0
```

System   2   Block   UH   - UNIT HEATERS

```
*********************** COOLING COIL PEAK ******************************** CLG SPACE PEAK ************ HEATING COIL PEAK ********
Peaked at Time ==)          Mo/Hr:  0/ 0                          *      Mo/Hr:  0/ 0      *              Mo/Hr: 13/ 1
Outside Air ==)             OADB/WB/HR:   0/ 0/  0.0              *      OADB:  0          *              OADB:  23
                                                                 *                        *
                    Space    Ret. Air  Ret. Air     Net  Percnt *      Space    Percnt *  Space Peak  Coil Peak   Percnt
                 Sens.+Lat.  Sensible   Latent     Total  Of Tot *   Sensible   Of Tot *  Space Sens  Tot Sens    Of Tot
Envelope Loads    (Btuh)     (Btuh)    (Btuh)     (Btuh)    (%)  *    (Btuh)     (%)    *   (Btuh)     (Btuh)      (%)
  Skylite Solr       0          0                     0   0.00  *       0       0.00   *      0           0       0.00
  Skylite Cond       0          0                     0   0.00  *       0       0.00   *      0           0       0.00
  Roof Cond          0          0                     0   0.00  *       0       0.00   *   -4,462      -4,462     7.70
  Glass Solar        0          0                     0   0.00  *       0       0.00   *      0           0       0.00
  Glass Cond         0          0                     0   0.00  *       0       0.00   *   -4,810      -4,810     8.30
  Wall Cond          0          0                     0   0.00  *       0       0.00   *  -12,949     -12,949    22.33
  Partition          0                                0   0.00  *       0       0.00   *      0           0       0.00
  Exposed Floor      0                                0   0.00  *       0       0.00   *      0           0       0.00
  Infiltration       0                                0   0.00  *       0       0.00   *   -9,548      -9,548    16.47
  Sub Total==)       0          0                     0   0.00  *       0       0.00   *  -31,770     -31,770    54.79
Internal Loads                                                  *                       *
  Lights             0          0                     0   0.00  *       0       0.00   *      0           0       0.00
  People             0                                0   0.00  *       0       0.00   *      0           0       0.00
  Misc               0          0         0           0   0.00  *       0       0.00   *      0           0       0.00
  Sub Total==)       0          0         0           0   0.00  *       0       0.00   *      0           0       0.00
Ceiling Load         0          0                     0   0.00  *       0       0.00   *      0           0       0.00
Outside Air          0          0         0           0   0.00  *       0       0.00   *      0       -26,210    45.21
Sup. Fan Heat                                         0   0.00  *               0.00   *                  0       0.00
Ret. Fan Heat                   0                     0   0.00  *               0.00   *                  0       0.00
Duct Heat Pkup                  0                     0   0.00  *               0.00   *                  0       0.00
OV/UNDR Sizing       0                               0   0.00  *       0       0.00   *      0           0       0.00
Exhaust Heat                    0         0           0   0.00  *               0.00   *                  0       0.00
Terminal Bypass                 0         0           0   0.00  *               0.00   *                  0       0.00
                                                                *                       *
Grand Total==)       0          0         0           0   0.00  *       0       0.00   *  -31,770     -57,980   100.00
```

```
--------------------------------COOLING COIL SELECTION--------------------------------    --------------AREAS--------------
        Total Capacity  Sens Cap.  Coil Airfl   Entering DB/WB/HR     Leaving DB/WB/HR    Gross Total    Glass (sf)  (%)
        (Tons)  (Mbh)    (Mbh)      (cfm)     Deg F Deg F Grains   Deg F Deg F Grains   Floor    2,448
Main Clg  0.0    0.0      0.0         0        0.0   0.0   0.0      0.0   0.0   0.0      Part      600
Aux  Clg  0.0    0.0      0.0         0        0.0   0.0   0.0      0.0   0.0   0.0      ExFlr       0
Opt Vent  0.0    0.0      0.0         0        0.0   0.0   0.0      0.0   0.0   0.0      Roof     2,448          0     0
Totals    0.0    0.0                                                                    Wall     1,913         203    11
```

```
------------HEATING COIL SELECTION-------------   --------AIRFLOWS (cfm)--------   --ENGINEERING CHECKS--   --TEMPERATURES (F)---
        Capacity  Coil Airfl  Ent    Lvg       Type    Cooling  Heating    Clg % OA         0.0     Type      Clg    Htg
        (Mbh)     (cfm)      Deg F  Deg F    Vent         0        525     Clg Cfm/Sqft     0.00     SADB      0.0   79.7
Main Htg  -58.0    2,448      58.3   79.7    Infil        0        191     Clg Cfm/Ton      0.00     Plenum    0.0   68.0
Aux  Htg   0.0        0       0.0    0.0     Supply       0      2,448     Clg Sqft/Ton     0.00     Return    0.0   68.0
Preheat    0.0        0       0.0    0.0     Mincfm       0          0     Clg Btuh/Sqft    0.00     Ret/OA    0.0   58.3
Reheat     0.0        0       0.0    0.0     Return       0      2,448     No. People         0     Runarnd   0.0   68.0
Humidif    0.0        0       0.0    0.0     Exhaust      0        525     Htg % OA        21.4      Fn MtrTD  0.0    0.0
Opt Vent   0.0        0       0.0    0.0     Rm Exh       0          0     Htg Cfm/SqFt     1.00     Fn BldTD  0.0    0.0
Total    -58.0                              Auxil        0          0     Htg Btuh/SqFt  -23.68     Fn Frict  0.0    0.0
```

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

January			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-60,653	0.0	-23,350	0.0	-21,702	0.0	-21,695	0.0	-21,695	0.0
2	32.9	30.7	-42,925	0.0	-23,191	0.0	-21,881	0.0	-21,876	0.0	-21,875	0.0
3	33.1	31.3	-27,471	0.0	-22,776	0.0	-21,735	0.0	-21,730	0.0	-21,730	0.0
4	33.9	32.1	-29,141	0.0	-21,961	0.0	-21,132	0.0	-21,129	0.0	-21,129	0.0
5	35.2	33.5	-30,319	0.0	-20,796	0.0	-20,137	0.0	-20,135	0.0	-20,135	0.0
6	37.0	35.4	-29,648	0.0	-19,546	0.0	-19,022	0.0	-19,020	0.0	-19,020	0.0
7	39.0	37.6	-28,811	0.0	-18,130	0.0	-17,713	0.0	-17,711	0.0	-17,711	0.0
8	41.3	40.1	-25,923	0.0	-16,571	0.0	-16,240	0.0	-16,238	0.0	-16,238	0.0
9	43.7	42.5	-17,893	0.0	-14,937	0.0	-14,674	0.0	-14,673	0.0	-14,673	0.0
10	46.1	44.0	-11,165	0.0	-13,040	0.0	-12,831	0.0	-12,830	0.0	-12,830	0.0
11	48.4	45.0	-7,408	0.0	-11,029	0.0	-10,863	0.0	-10,862	0.0	-10,862	0.0
12	50.5	45.6	-3,676	0.0	-9,105	0.0	-8,974	0.0	-8,973	0.0	-8,973	0.0
13	52.2	46.1	-806	0.0	-7,562	0.0	-7,457	0.0	-7,457	0.0	-7,457	0.0
14	53.5	46.4	0	0.0	-6,454	0.0	-6,372	0.0	-6,371	0.0	-6,371	0.0
15	54.3	46.3	0	0.0	-5,744	0.0	-5,678	0.0	-5,678	0.0	-5,678	0.0
16	54.6	46.1	0	0.0	-5,380	0.0	-5,328	0.0	-5,328	0.0	-5,328	0.0
17	54.0	45.9	0	0.0	-5,932	0.0	-5,891	0.0	-5,891	0.0	-5,891	0.0
18	52.5	45.0	0	0.0	-7,238	0.0	-7,205	0.0	-7,205	0.0	-7,205	0.0
19	50.1	44.8	-2,358	0.0	-9,414	0.0	-9,388	0.0	-9,388	0.0	-9,388	0.0
20	47.1	43.3	-5,283	0.0	-11,858	0.0	-11,837	0.0	-11,837	0.0	-11,837	0.0
21	43.7	40.4	-7,676	0.0	-14,537	0.0	-14,521	0.0	-14,521	0.0	-14,521	0.0
22	40.4	37.3	-9,889	0.0	-16,860	0.0	-16,847	0.0	-16,847	0.0	-16,847	0.0
23	37.3	34.9	-11,468	0.0	-19,046	0.0	-19,035	0.0	-19,035	0.0	-19,035	0.0
24	34.9	32.6	-12,866	0.0	-20,681	0.0	-20,673	0.0	-20,673	0.0	-20,673	0.0

February			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-11,403	0.0	-15,663	0.0	-15,924	0.0	-15,925	0.0	-15,925	0.0
2	39.7	37.1	-12,715	0.0	-17,266	0.0	-17,474	0.0	-17,474	0.0	-17,474	0.0
3	37.8	35.1	-13,947	0.0	-18,619	0.0	-18,784	0.0	-18,785	0.0	-18,785	0.0
4	36.3	33.8	-14,849	0.0	-19,649	0.0	-19,780	0.0	-19,781	0.0	-19,781	0.0
5	35.1	32.6	-15,398	0.0	-20,592	0.0	-20,697	0.0	-20,697	0.0	-20,697	0.0
6	34.4	32.0	-15,505	0.0	-21,059	0.0	-21,142	0.0	-21,143	0.0	-21,143	0.0
7	34.1	31.9	-15,187	0.0	-21,266	0.0	-21,332	0.0	-21,332	0.0	-21,332	0.0
8	34.6	32.4	-14,212	0.0	-20,925	0.0	-20,978	0.0	-20,978	0.0	-20,978	0.0
9	36.0	33.8	-12,336	0.0	-19,706	0.0	-19,747	0.0	-19,747	0.0	-19,747	0.0
10	38.2	34.7	-9,407	0.0	-17,631	0.0	-17,664	0.0	-17,664	0.0	-17,664	0.0
11	40.9	36.2	-5,819	0.0	-15,078	0.0	-15,104	0.0	-15,105	0.0	-15,105	0.0
12	43.9	37.4	-2,258	0.0	-12,382	0.0	-12,402	0.0	-12,402	0.0	-12,402	0.0
13	46.9	39.4	0	0.0	-9,989	0.0	-10,005	0.0	-10,005	0.0	-10,005	0.0
14	49.7	41.4	0	0.0	-7,688	0.0	-7,701	0.0	-7,701	0.0	-7,701	0.0
15	51.8	42.8	0	0.0	-6,101	0.0	-6,111	0.0	-6,111	0.0	-6,111	0.0
16	53.2	43.9	0	0.0	-5,186	0.0	-5,194	0.0	-5,194	0.0	-5,194	0.0
17	53.7	44.2	0	0.0	-4,957	0.0	-4,963	0.0	-4,963	0.0	-4,963	0.0
18	53.4	44.4	0	0.0	-5,351	0.0	-5,356	0.0	-5,356	0.0	-5,356	0.0
19	52.7	44.4	0	0.0	-6,424	0.0	-6,428	0.0	-6,428	0.0	-6,428	0.0
20	51.5	45.2	-2,373	0.0	-7,836	0.0	-7,839	0.0	-7,839	0.0	-7,839	0.0
21	50.0	44.6	-5,056	0.0	-9,324	0.0	-9,327	0.0	-9,327	0.0	-9,327	0.0
22	48.1	43.3	-7,404	0.0	-11,048	0.0	-11,050	0.0	-11,050	0.0	-11,050	0.0
23	46.1	41.8	-9,281	0.0	-12,654	0.0	-12,656	0.0	-12,656	0.0	-12,656	0.0
24	43.9	40.1	-10,731	0.0	-14,311	0.0	-14,313	0.0	-14,313	0.0	-14,313	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

March			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-3,089	0.0	-888	0.0	-5,194	0.0	-5,287	0.0	-5,289	0.0
2	48.7	44.6	-4,393	0.0	-4,342	0.0	-7,763	0.0	-7,837	0.0	-7,839	0.0
3	46.6	42.9	-5,380	0.0	-7,073	0.0	-9,791	0.0	-9,850	0.0	-9,851	0.0
4	44.9	41.4	-6,380	0.0	-8,930	0.0	-11,292	0.0	-11,338	0.0	-11,339	0.0
5	43.9	40.8	-6,841	0.0	-10,645	0.0	-12,291	0.0	-12,328	0.0	-12,329	0.0
6	43.5	40.8	-6,811	0.0	-11,426	0.0	-12,734	0.0	-12,764	0.0	-12,765	0.0
7	44.0	41.4	-6,267	0.0	-11,615	0.0	-12,656	0.0	-12,679	0.0	-12,680	0.0
8	45.4	42.7	-4,785	0.0	-10,880	0.0	-11,707	0.0	-11,725	0.0	-11,726	0.0
9	47.7	44.3	-2,057	0.0	-9,093	0.0	-9,751	0.0	-9,765	0.0	-9,766	0.0
10	50.6	45.8	0	0.0	-6,491	0.0	-7,013	0.0	-7,025	0.0	-7,025	0.0
11	53.9	47.4	0	0.0	-3,480	0.0	-3,894	0.0	-3,903	0.0	-3,904	0.0
12	57.4	49.0	0	0.0	-306	0.0	-634	0.0	-641	0.0	-641	0.0
13	60.7	50.8	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
14	63.6	52.7	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
15	65.9	53.7	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
16	67.3	54.4	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.1	51.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.2	49.4	0	0.0	-2,291	0.0	-2,408	0.0	-2,411	0.0	-2,411	0.0

April			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2	51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	53.5	50.9	0	0.0	-761	0.0	-1,136	0.0	-1,136	0.0	-1,136	0.0
7	53.2	51.1	0	0.0	-1,981	0.0	-2,283	0.0	-2,283	0.0	-2,283	0.0
8	53.9	51.5	0	0.0	-2,029	0.0	-2,269	0.0	-2,269	0.0	-2,269	0.0
9	55.9	52.1	0	0.0	-685	0.0	-877	0.0	-877	0.0	-877	0.0
10	58.9	53.2	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
11	62.6	55.2	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
12	66.5	57.3	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	1.4	0	0.1	0	0.1	0	0.1	0	0.1
14	73.2	61.0	0	1.7	0	0.2	0	0.2	0	0.2	0	0.2
15	75.2	62.2	0	1.8	0	0.2	0	0.2	0	0.2	0	0.2
16	75.9	62.2	0	1.9	0	0.2	0	0.2	0	0.2	0	0.2
17	75.6	62.0	0	2.0	0	0.4	0	0.4	0	0.4	0	0.4
18	74.9	61.7	0	1.8	0	0.8	0	0.8	0	0.8	0	0.8
19	73.7	62.0	0	1.4	0	0.6	0	0.6	0	0.6	0	0.6
20	72.1	62.4	0	1.0	0	0.4	0	0.4	0	0.4	0	0.4
21	70.2	63.3	0	0.7	0	0.2	0	0.2	0	0.2	0	0.2
22	68.0	62.5	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
23	65.7	60.5	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

May			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	0.2	0	0.1	0	0.1	0	0.1	0	0.1
2	65.7	61.5	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
3	63.6	59.7	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	1.7	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	1.9	0	0.1	0	0.1	0	0.1	0	0.1
13	78.5	63.7	0	2.1	0	0.8	0	0.8	0	0.8	0	0.8
14	81.9	65.3	0	2.2	0	1.2	0	1.2	0	1.2	0	1.2
15	84.1	66.9	0	2.5	0	1.4	0	1.4	0	1.4	0	1.4
16	84.9	67.1	0	2.6	0	1.5	0	1.5	0	1.5	0	1.5
17	84.6	67.3	0	2.6	0	1.6	0	1.6	0	1.6	0	1.6
18	83.8	67.1	0	2.4	0	1.5	0	1.5	0	1.5	0	1.5
19	82.4	67.5	0	2.1	0	1.3	0	1.3	0	1.3	0	1.3
20	80.6	68.9	0	1.6	0	1.1	0	1.1	0	1.1	0	1.1
21	78.5	71.0	0	1.3	0	1.0	0	1.0	0	1.0	0	1.0
22	76.1	69.9	0	1.0	0	0.8	0	0.8	0	0.8	0	0.8
23	73.4	68.0	0	0.8	0	0.5	0	0.5	0	0.5	0	0.5
24	70.8	65.5	0	0.7	0	0.3	0	0.3	0	0.3	0	0.3

June			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	1.4	0	0.7	0	0.8	0	0.8	0	0.8
2	72.6	68.4	0	1.1	0	0.5	0	0.5	0	0.5	0	0.5
3	70.9	67.3	0	1.0	0	0.4	0	0.4	0	0.4	0	0.4
4	69.6	66.5	0	0.9	0	0.3	0	0.3	0	0.3	0	0.3
5	68.7	65.8	0	0.8	0	0.1	0	0.1	0	0.1	0	0.1
6	68.5	65.7	0	0.8	0	0.1	0	0.1	0	0.1	0	0.1
7	69.0	66.3	0	1.1	0	0.3	0	0.3	0	0.3	0	0.3
8	70.6	66.9	0	1.5	0	0.5	0	0.5	0	0.5	0	0.5
9	73.0	67.7	0	1.9	0	0.8	0	0.8	0	0.8	0	0.8
10	76.1	68.1	0	2.2	0	1.2	0	1.2	0	1.2	0	1.2
11	79.5	69.1	0	2.5	0	1.4	0	1.4	0	1.4	0	1.4
12	82.9	70.1	0	2.7	0	1.7	0	1.7	0	1.7	0	1.7
13	86.0	71.0	0	2.9	0	1.8	0	1.8	0	1.8	0	1.8
14	88.4	72.5	0	3.0	0	2.1	0	2.1	0	2.1	0	2.1
15	90.0	74.0	0	3.2	0	2.5	0	2.5	0	2.5	0	2.5
16	90.5	73.7	0	3.3	0	2.5	0	2.5	0	2.5	0	2.5
17	90.3	74.2	0	3.4	0	2.5	0	2.5	0	2.5	0	2.5
18	89.4	73.9	0	3.2	0	2.5	0	2.5	0	2.5	0	2.5
19	88.1	74.5	0	2.9	0	2.3	0	2.3	0	2.3	0	2.3
20	86.4	75.3	0	2.4	0	1.9	0	1.9	0	1.9	0	1.9
21	84.3	76.5	0	2.1	0	1.7	0	1.7	0	1.7	0	1.7
22	81.9	75.7	0	1.8	0	1.5	0	1.5	0	1.5	0	1.5
23	79.5	74.0	0	1.6	0	1.3	0	1.3	0	1.3	0	1.3
24	77.0	72.1	0	1.5	0	1.0	0	1.0	0	1.0	0	1.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

July			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	1.5	0	0.5	0	0.6	0	0.6	0	0.6
2	72.4	69.4	0	1.2	0	0.5	0	0.5	0	0.5	0	0.5
3	71.3	68.4	0	1.1	0	0.3	0	0.3	0	0.3	0	0.3
4	70.5	67.7	0	1.0	0	0.2	0	0.2	0	0.2	0	0.2
5	70.0	67.4	0	1.0	0	0.2	0	0.2	0	0.2	0	0.2
6	69.9	67.5	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	1.2	0	0.2	0	0.2	0	0.2	0	0.2
8	71.7	69.0	0	1.5	0	0.6	0	0.6	0	0.6	0	0.6
9	73.7	69.5	0	2.0	0	0.9	0	0.9	0	0.9	0	0.9
10	76.2	70.6	0	2.3	0	1.3	0	1.3	0	1.3	0	1.3
11	78.9	71.8	0	2.5	0	1.6	0	1.6	0	1.6	0	1.6
12	81.4	73.0	0	2.7	0	1.8	0	1.8	0	1.8	0	1.8
13	83.4	74.4	0	2.8	0	2.0	0	2.0	0	2.0	0	2.0
14	84.8	74.8	0	3.0	0	2.1	0	2.1	0	2.1	0	2.1
15	85.2	75.0	0	3.1	0	2.3	0	2.3	0	2.3	0	2.3
16	85.1	75.0	0	3.3	0	2.3	0	2.3	0	2.3	0	2.3
17	84.6	74.7	0	3.3	0	2.3	0	2.3	0	2.3	0	2.3
18	83.8	74.6	0	3.2	0	2.3	0	2.3	0	2.3	0	2.3
19	82.7	74.6	0	2.9	0	2.1	0	2.1	0	2.1	0	2.1
20	81.4	74.4	0	2.4	0	1.8	0	1.8	0	1.8	0	1.8
21	79.9	74.9	0	2.1	0	1.5	0	1.5	0	1.5	0	1.5
22	78.4	74.0	0	1.8	0	1.2	0	1.2	0	1.2	0	1.2
23	76.8	72.7	0	1.6	0	1.0	0	1.0	0	1.0	0	1.0
24	75.2	71.6	0	1.5	0	0.8	0	0.8	0	0.8	0	0.8

August			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	1.4	0	0.6	0	0.8	0	0.8	0	0.8
2	73.2	70.3	0	1.1	0	0.5	0	0.6	0	0.6	0	0.6
3	71.7	68.9	0	1.0	0	0.4	0	0.4	0	0.4	0	0.4
4	70.4	67.8	0	0.9	0	0.2	0	0.2	0	0.2	0	0.2
5	69.5	66.8	0	0.8	0	0.1	0	0.2	0	0.2	0	0.2
6	68.9	66.4	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
7	68.7	66.4	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
8	69.2	66.8	0	1.4	0	0.3	0	0.3	0	0.3	0	0.3
9	70.8	67.7	0	1.8	0	0.6	0	0.6	0	0.6	0	0.6
10	73.2	67.7	0	2.1	0	1.0	0	1.0	0	1.0	0	1.0
11	76.2	68.8	0	2.4	0	1.2	0	1.2	0	1.2	0	1.2
12	79.3	70.3	0	2.6	0	1.4	0	1.4	0	1.4	0	1.4
13	82.3	72.2	0	2.8	0	1.6	0	1.6	0	1.6	0	1.6
14	84.7	73.7	0	3.0	0	1.9	0	1.9	0	1.9	0	1.9
15	86.3	74.6	0	3.2	0	2.2	0	2.2	0	2.2	0	2.2
16	86.8	75.1	0	3.3	0	2.3	0	2.3	0	2.3	0	2.3
17	86.6	75.1	0	3.3	0	2.4	0	2.4	0	2.4	0	2.4
18	86.0	75.3	0	3.1	0	2.4	0	2.4	0	2.4	0	2.4
19	85.1	76.0	0	2.7	0	2.1	0	2.1	0	2.1	0	2.1
20	83.8	76.8	0	2.3	0	1.8	0	1.8	0	1.8	0	1.8
21	82.3	77.2	0	2.0	0	1.6	0	1.6	0	1.6	0	1.6
22	80.6	76.3	0	1.8	0	1.5	0	1.5	0	1.5	0	1.5
23	78.7	75.3	0	1.6	0	1.2	0	1.2	0	1.2	0	1.2
24	76.8	73.7	0	1.4	0	1.0	0	1.0	0	1.0	0	1.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

September			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	0.8	0	0.1	0	0.1	0	0.1	0	0.1
2	67.6	65.0	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	1.8	0	0.1	0	0.1	0	0.1	0	0.1
13	78.3	66.7	0	2.0	0	0.6	0	0.7	0	0.7	0	0.7
14	81.2	68.4	0	2.2	0	1.2	0	1.2	0	1.2	0	1.2
15	83.0	70.0	0	2.4	0	1.4	0	1.4	0	1.4	0	1.4
16	83.7	70.5	0	2.5	0	1.6	0	1.6	0	1.6	0	1.6
17	83.4	70.5	0	2.5	0	1.6	0	1.6	0	1.6	0	1.6
18	82.8	70.9	0	2.2	0	1.5	0	1.5	0	1.5	0	1.5
19	81.6	72.7	0	1.8	0	1.3	0	1.3	0	1.3	0	1.3
20	80.1	74.7	0	1.6	0	1.2	0	1.2	0	1.2	0	1.2
21	78.3	74.1	0	1.4	0	1.0	0	1.0	0	1.0	0	1.0
22	76.3	72.4	0	1.1	0	0.7	0	0.7	0	0.7	0	0.7
23	74.1	70.7	0	0.9	0	0.5	0	0.5	0	0.5	0	0.5
24	71.8	68.9	0	0.7	0	0.3	0	0.3	0	0.3	0	0.3

October			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	-3,930	0.0	-4,076	0.0	-4,082	0.0
2	50.1	48.6	0	0.0	-2,835	0.0	-6,109	0.0	-6,226	0.0	-6,230	0.0
3	48.4	46.9	0	0.0	-5,242	0.0	-7,852	0.0	-7,945	0.0	-7,948	0.0
4	47.1	45.8	0	0.0	-7,023	0.0	-9,103	0.0	-9,177	0.0	-9,180	0.0
5	46.3	44.8	-278	0.0	-8,297	0.0	-9,954	0.0	-10,013	0.0	-10,015	0.0
6	46.0	44.5	-1,301	0.0	-9,254	0.0	-10,573	0.0	-10,620	0.0	-10,622	0.0
7	46.8	45.3	-1,483	0.0	-9,220	0.0	-10,270	0.0	-10,308	0.0	-10,309	0.0
8	48.9	47.5	-550	0.0	-7,986	0.0	-8,822	0.0	-8,852	0.0	-8,853	0.0
9	52.2	49.9	0	0.0	-5,752	0.0	-6,417	0.0	-6,441	0.0	-6,441	0.0
10	56.2	52.5	0	0.0	-2,532	0.0	-3,061	0.0	-3,080	0.0	-3,080	0.0
11	60.4	54.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	64.4	56.0	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
13	67.7	57.3	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	0.3	0	0.1	0	0.1	0	0.1	0	0.1
16	70.3	57.5	0	0.8	0	0.0	0	0.1	0	0.1	0	0.1
17	69.5	57.3	0	1.2	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.5	52.7	0	0.0	-1,488	0.0	-1,671	0.0	-1,678	0.0	-1,678	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

November			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-1,280	0.0	-2,072	0.0	-6,535	0.0	-6,625	0.0	-6,627	0.0
2	49.4	47.3	-3,226	0.0	-5,174	0.0	-8,730	0.0	-8,802	0.0	-8,803	0.0
3	47.2	45.3	-4,979	0.0	-7,592	0.0	-10,424	0.0	-10,482	0.0	-10,483	0.0
4	45.3	43.4	-6,278	0.0	-9,696	0.0	-11,952	0.0	-11,998	0.0	-11,999	0.0
5	43.9	42.2	-7,082	0.0	-11,169	0.0	-12,967	0.0	-13,003	0.0	-13,004	0.0
6	43.0	41.4	-7,290	0.0	-12,294	0.0	-13,725	0.0	-13,754	0.0	-13,755	0.0
7	42.7	41.2	-6,746	0.0	-12,791	0.0	-13,932	0.0	-13,955	0.0	-13,955	0.0
8	43.5	42.0	-5,421	0.0	-12,437	0.0	-13,345	0.0	-13,363	0.0	-13,364	0.0
9	45.9	44.0	-2,905	0.0	-10,826	0.0	-11,549	0.0	-11,564	0.0	-11,564	0.0
10	49.4	46.6	0	0.0	-8,052	0.0	-8,628	0.0	-8,640	0.0	-8,640	0.0
11	53.8	48.6	0	0.0	-4,440	0.0	-4,898	0.0	-4,907	0.0	-4,907	0.0
12	58.4	50.6	0	0.0	-775	0.0	-1,138	0.0	-1,145	0.0	-1,145	0.0
13	62.8	52.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	66.3	54.5	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
15	68.7	55.7	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2	56.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.5	54.0	0	0.0	-1,661	0.0	-1,803	0.0	-1,806	0.0	-1,806	0.0
24	54.7	51.7	0	0.0	-4,232	0.0	-4,345	0.0	-4,348	0.0	-4,348	0.0

December			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-6,917	0.0	-13,318	0.0	-13,637	0.0	-13,638	0.0	-13,638	0.0
2	43.2	41.1	-8,389	0.0	-14,542	0.0	-14,796	0.0	-14,797	0.0	-14,797	0.0
3	41.8	39.8	-9,531	0.0	-15,499	0.0	-15,701	0.0	-15,702	0.0	-15,702	0.0
4	40.7	38.7	-10,433	0.0	-16,343	0.0	-16,504	0.0	-16,504	0.0	-16,504	0.0
5	40.1	38.4	-11,080	0.0	-16,734	0.0	-16,862	0.0	-16,862	0.0	-16,862	0.0
6	39.9	38.4	-11,122	0.0	-16,845	0.0	-16,947	0.0	-16,947	0.0	-16,947	0.0
7	40.5	39.0	-10,654	0.0	-16,432	0.0	-16,513	0.0	-16,513	0.0	-16,513	0.0
8	42.2	40.7	-9,699	0.0	-15,196	0.0	-15,260	0.0	-15,260	0.0	-15,260	0.0
9	44.9	43.4	-7,845	0.0	-13,352	0.0	-13,403	0.0	-13,403	0.0	-13,403	0.0
10	48.2	45.8	-5,181	0.0	-10,724	0.0	-10,765	0.0	-10,765	0.0	-10,765	0.0
11	51.7	48.3	-1,860	0.0	-7,784	0.0	-7,817	0.0	-7,817	0.0	-7,817	0.0
12	55.0	50.7	0	0.0	-4,992	0.0	-5,017	0.0	-5,017	0.0	-5,017	0.0
13	57.7	52.0	0	0.0	-2,802	0.0	-2,823	0.0	-2,823	0.0	-2,823	0.0
14	59.5	52.6	0	0.0	-1,424	0.0	-1,440	0.0	-1,440	0.0	-1,440	0.0
15	60.1	52.7	0	0.0	-941	0.0	-954	0.0	-954	0.0	-954	0.0
16	59.9	52.6	0	0.0	-1,122	0.0	-1,132	0.0	-1,132	0.0	-1,132	0.0
17	59.2	52.1	0	0.0	-1,786	0.0	-1,794	0.0	-1,794	0.0	-1,794	0.0
18	58.2	51.8	0	0.0	-2,927	0.0	-2,933	0.0	-2,933	0.0	-2,933	0.0
19	56.8	52.2	0	0.0	-4,401	0.0	-4,406	0.0	-4,406	0.0	-4,406	0.0
20	55.0	51.4	0	0.0	-6,135	0.0	-6,139	0.0	-6,139	0.0	-6,139	0.0
21	53.1	50.1	0	0.0	-7,762	0.0	-7,765	0.0	-7,765	0.0	-7,765	0.0
22	51.0	48.1	-2,497	0.0	-9,349	0.0	-9,352	0.0	-9,352	0.0	-9,352	0.0
23	48.9	46.2	-4,607	0.0	-10,875	0.0	-10,877	0.0	-10,877	0.0	-10,877	0.0
24	46.9	44.1	-6,166	0.0	-12,265	0.0	-12,266	0.0	-12,266	0.0	-12,266	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 24410 (5 BUILDINGS)

-----CARD 08-- Climatic Information --

Weather Code	Summer Clearness Number	Winter Clearness Number	Summer Design Dry Bulb	Summer Design Wet Bulb	Winter Design Dry Bulb	Building Orientation	Summer Ground Reflect	Winter Ground Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods--

1st Month Cooling Simulation	Last Month Cooling Simulation	Peak Cooling Load Hr	1st Month Summer Period	Last Month Summer Period	1st Month Daylight Savings	Last Month Daylight Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters----------------------------

Cooling Load Method	Heating Load Method	Ventilation Method	Airflow Input Units	Airflow Output Units	Room Circulation Rate	Put Wall RA Load to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

--------------------- Load Section Alternative #1 ---------------------

---- Load Alternative ----

Number	Description
1	OFFICES AND CLASSROOMS

-----CARD 20-- General Room Parameters --

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
1	1	OFFICE AREA	49	48	2	6		15.5			

-----CARD 20-- General Room Parameters ---

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	2	STORAGE AREA	51	48	2	0		15.5			

-----CARD 21-- Thermostat Parameters ---

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO
2		50					HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters ---

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				5			
2	1	YES				5			

-----CARD 24-- Wall Parameters --

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	48	15.5		181	0			
1	2	49	15.5		181	90			
1	3	49	15.5		181	270			
2	1	51	12.75		181	90			
2	2	26	12.75		181	180			
2	3	22	12.75	.61		180			
2	4	51	12.75		181	270			

-----CARD 25-- Wall/Glass Parameters ---

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1				.55	.82					
1	2	132	1	1	.48	.56					
1	3	4	1.5	14	.55	.82					
2	1	70	1	1	.55	.82					
2	4	133	1	1	.48	.56					

-----CARD 26-- Schedules ---

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights --

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting ---- Reference Point 1	Reference Point 2
1	15	PEOPLE	255	325	1.4	WATT-SF	ASHRAE2				
2	35	PEOPLE	315	435	1.4	WATT-SF	SUSFLUOR				

-----CARD 28--- Miscellaneous Equipment --

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	P.C.	1	KW	FGHEAT						
1	2	COPIER	.7	KW	FGHEAT						
1	3	REFRIG	.6	KW	FGHEAT						
1	4	VENDING	1.2	KW	FGHEAT						
1	5	TV	.2	KW							

-----CARD 29--- Room Airflows ---

Room Number	Ventilation Cooling Value	Ventilation Cooling Units	Ventilation Heating Value	Ventilation Heating Units	Infiltration Cooling Value	Infiltration Cooling Units	Infiltration Heating Value	Infiltration Heating Units	Reheat Minimum Value	Reheat Minimum Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.10	CFM-SF		
2			15	CFM-P			.1	CFM-SF		

-----CARD 30- Fan Airflows --

Room Number	Main Cooling Value	Main Cooling Units	Main Heating Value	Main Heating Units	Auxiliary Cooling Value	Auxiliary Cooling Units	Auxiliary Heating Value	Auxiliary Heating Units	Room Exhaust Value	Room Exhaust Units
1	1	CFM-SF	1	CFM-SF						
2			1	CFM-SF						

-----CARD 31-- Partition Parameters ---

Room Number	Partition Number	Partition Length	Partition Height	Partition U-Value	Const Type	Temp Flag	Cooling Temp	Heating Temp	Adjacent Room No
1	1	48	12.5	.49					2
2	1	48	12.5	.49					1

-------------------- System Section Alternative #1 --------------------

-----CARD 39-- System Alternative -----
Number   Description
1   MULTI-ZONE SYSTEMS

-----CARD 40--- System Type --

------------OPTIONAL VENTILATION SYSTEM------------

System Set Number	System Type	Ventil Deck Location	Cooling SADBVh	Heating SADBVh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	MZ						
2	UH						

-----CARD 41-- Zone Assignment ---

System Set Number	Ref #1 Begin	Ref #1 End	Ref #2 Begin	Ref #2 End	Ref #3 Begin	Ref #3 End	Ref #4 Begin	Ref #4 End	Ref #5 Begin	Ref #5 End	Ref #6 Begin	Ref #6 End
1	1	1										
2	2	2										

-----CARD 42--- Fan SP and Duct Parameters--

System Set Number	Cool Fan SP	Heat Fan SP	Return Fan SP	Mn Exh Fan SP	Aux Fan SP	Rm Exh Fan SP	Cool Fan Mtr Loc	Return Fan Mtr Loc	Supply Duct Ht Gn	Supply Duct Loc	Return Air Path
1											
2											

-----CARD 48-- Cooling Capacity Overrides ---

System Set Number	People Variance	Lights Variance	Misc Loads Variance	MAIN COOLING Capacity Value	Capacity Units	Capacity Sizing	Capacity Location	AUX COOLING Capacity Value	Capacity Units
1			75						

Utility Description Reference Table

    Schedules:
        CLGCONST SAMPLE COOLING TSTAT SCHEDULE
        FGHEAT SCHD FOR HEAT LOAD CALCS
        HTGCONST SAMPLE HEATING TSTAT SCHEDULE
        YES AVAILABLE (100%)
    System:
        MZ   (Utility file not found)
        UH   (Utility file not found)

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   0
 24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   0
 24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Temperature
----   ------------
   0   72
  24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
   0   100
  24

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*************************************************************************
*************************************************************************
**                                                                     **
**                 T R A C E   6 0 0   A N A L Y S I S                  **
**                                                                     **
**            by              **                                       **
**                                                                     **
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ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 24414 (1 BUILDING)

Weather File Code:	AUGUSTA
Location:	FORT GORDON, GEORGIA
Latitude:	33.0 (deg)
Longitude:	82.0 (deg)
Time Zone:	5
Elevation:	143 (ft)
Barometric Pressure:	29.8 (in. Hg)

Summer Clearness Number:	0.90
Winter Clearness Number:	0.90
Summer Design Dry Bulb:	95 (F)
Summer Design Wet Bulb:	76 (F)
Winter Design Dry Bulb:	23 (F)
Summer Ground Relectance:	0.20
Winter Ground Relectance:	0.20

Air Density:	0.0756 (Lbm/cuft)
Air Specific Heat:	0.2444 (Btu/lbm/F)
Density-Specific Heat Prod:	1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor:	4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor:	4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April   To October
System Simulation Period: January   To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 18:52: 7   8/16/94
Dataset Name: FGTYPS34 .TM

System   1   Peak   SZ   - SINGLE ZONE

```
*************************** COOLING COIL PEAK ****************************** CLG SPACE PEAK ************ HEATING COIL PEAK ********
Peaked at Time ==)         Mo/Hr:  8/16                    *    Mo/Hr:  6/16     *         Mo/Hr: 13/ 1
Outside Air ==)       OADB/WB/HR:  96/ 76/105.0            *    OADB: 100        *         OADB:  23
                                                          *                     *
                                                          *                     *
                    Space    Ret. Air  Ret. Air    Net  Percnt *  Space   Percnt *  Space Peak  Coil Peak   Percnt
                   Sens.+Lat. Sensible  Latent   Total  Of Tot *  Sensible Of Tot *  Space Sens  Tot Sens   Of Tot
Envelope Loads      (Btuh)    (Btuh)   (Btuh)   (Btuh)   (%)  *  (Btuh)    (%)  *   (Btuh)     (Btuh)      (%)
  Skylite Solr         0         0                   0   0.00 *     0      0.00 *      0          0        0.00
  Skylite Cond         0         0                   0   0.00 *     0      0.00 *      0          0        0.00
  Roof Cond       19,590         0              19,590  32.10 *  21,393   51.75 *  -10,965    -10,965     14.79
  Glass Solar          0         0                   0   0.00 *     0      0.00 *      0          0        0.00
  Glass Cond           0         0                   0   0.00 *     0      0.00 *      0          0        0.00
  Wall Cond        8,811         0               8,811  14.44 *   9,688   23.43 *   -9,863     -9,863     13.30
  Partition            0                             0   0.00 *     0      0.00 *      0          0        0.00
  Exposed Floor        0                             0   0.00 *     0      0.00 *      0          0        0.00
  Infiltration    12,533                        12,533  20.54 *  10,259   24.82 *  -23,362    -23,362     31.51
  Sub Total==)     40,934         0              40,934  67.08 *  41,340  100.00 *  -44,190    -44,190     59.60
Internal Loads                                               *                     *
  Lights             0         0                   0   0.00 *     0      0.00 *      0          0        0.00
  People             0                             0   0.00 *     0      0.00 *      0          0        0.00
  Misc               0         0        0          0   0.00 *     0      0.00 *      0          0        0.00
  Sub Total==)       0         0        0          0   0.00 *     0      0.00 *      0          0        0.00
Ceiling Load         0         0                   0   0.00 *     0      0.00 *      0          0        0.00
Outside Air          0         0        0     20,086  32.92 *     0      0.00 *      0      -29,955     40.40
Sup. Fan Heat                                      0   0.00 *            0.00 *                 0        0.00
Ret. Fan Heat                  0                   0   0.00 *            0.00 *                 0        0.00
Duct Heat Pkup                 0                   0   0.00 *            0.00 *                 0        0.00
OV/UNDR Sizing       0                             0   0.00 *     0      0.00 *      0          0        0.00
Exhaust Heat                   0        0          0   0.00 *            0.00 *                 0        0.00
Terminal Bypass                0        0          0   0.00 *            0.00 *                 0        0.00
                                                          *                     *
Grand Total==)     40,934         0        0     61,020 100.00 *  41,340  100.00 *  -44,190    -74,145    100.00
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-----------------------------------COOLING COIL SELECTION----------------------------------   --------------AREAS-------------
          Total Capacity  Sens Cap.  Coil Airfl   Entering DB/WB/HR      Leaving DB/WB/HR    Gross Total   Glass (sf) (%)
          (Tons)  (Mbh)    (Mbh)      (cfm)    Deg F Deg F Grains   Deg F Deg F Grains    Floor    6,015
Main Clg   5.1    61.0     51.2       6,015    77.1  68.6  92.0    68.8  65.7  90.8      Part     1,454
Aux  Clg   0.0     0.0      0.0           0     0.0   0.0   0.0     0.0   0.0   0.0      ExFlr        0
Opt Vent   0.0     0.0      0.0           0     0.0   0.0   0.0     0.0   0.0   0.0      Roof     6,015        0    0
Totals     5.1    61.0                                                                  Wall     4,679        0    0
```

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------------HEATING COIL SELECTION------------   --------AIRFLOWS (cfm)--------   --ENGINEERING CHECKS--   --TEMPERATURES (F)---
          Capacity  Coil Airfl   Ent    Lvg      Type    Cooling  Heating   Clg % OA       10.0      Type    Clg   Htg
          (Mbh)     (cfm)     Deg F   Deg F    Vent       600      600     Clg Cfm/Sqft    1.00     SADB    68.8  74.6
Main Htg   -74.1    6,015     63.5    74.6    Infil      374      468     Clg Cfm/Ton  1182.88     Plenum  75.0  68.0
Aux  Htg     0.0        0      0.0     0.0    Supply    6,015    6,015     Clg Sqft/Ton 1182.88     Return  75.0  68.0
Preheat    -35.3    6,015     63.5    68.8    Mincfm       0        0     Clg Btuh/Sqft  10.14     Ret/OA  77.1  63.5
Reheat       0.0        0      0.0     0.0    Return    6,015    6,015     No. People       40     Runarnd 75.0  68.0
Humidif      0.0        0      0.0     0.0    Exhaust    600      600     Htg % OA       10.0     Fn MtrTD 0.0   0.0
Opt Vent     0.0        0      0.0     0.0    Rm Exh       0        0     Htg Cfm/SqFt    1.00     Fn BldTD 0.0   0.0
Total      -74.1                              Auxil        0        0     Htg Btuh/SqFt -12.33     Fn Frict 0.0   0.0
```

System   2   Peak   SZ   - SINGLE ZONE

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*************************** COOLING COIL PEAK ******************************* CLG SPACE PEAK ************ HEATING COIL PEAK ********
Peaked at Time ==)              Mo/Hr:  8/15                  *      Mo/Hr:  6/17     *        Mo/Hr: 13/ 1
Outside Air ==)            OADB/WB/HR:  97/ 76/105.0          *       OADB:  98       *         OADB:  23
                                                             *                       *
                  Space    Ret. Air  Ret. Air    Net  Percnt *    Space    Percnt *  Space Peak  Coil Peak   Percnt
               Sens.+Lat.  Sensible   Latent    Total  Of Tot *  Sensible   Of Tot *  Space Sens  Tot Sens   Of Tot
Envelope Loads   (Btuh)     (Btuh)    (Btuh)   (Btuh)    (%)  *   (Btuh)     (%)  *    (Btuh)     (Btuh)      (%)
  Skylite Solr       0         0                    0   0.00  *       0     0.00  *        0          0      0.00
  Skylite Cond       0         0                    0   0.00  *       0     0.00  *        0          0      0.00
  Roof Cond     37,076         0               37,076   5.05  *  40,679    12.34  *  -21,335    -21,335      5.56
  Glass Solar   43,139         0               43,139   5.87  *  43,139    13.09  *        0          0      0.00
  Glass Cond    13,753         0               13,753   1.87  *  15,587     4.73  *  -34,700    -34,700      9.04
  Wall Cond      7,541         0                7,541   1.03  *   7,771     2.36  *   -7,377     -7,377      1.92
  Partition          0                              0   0.00  *       0     0.00  *        0          0      0.00
  Exposed Floor      0                              0   0.00  *       0     0.00  *        0          0      0.00
  Infiltration  15,271                         15,271   2.08  *   8,617     2.61  *  -20,892    -20,892      5.44
  Sub Total==)  116,780         0              116,780  15.90  * 115,793    35.13  *  -84,305    -84,305     21.96
Internal Loads                                               *                       *
  Lights       111,848         0              111,848  15.23  * 111,848    33.93  *        0          0      0.00
  People       232,000                        232,000  31.59  * 102,000    30.94  *        0          0      0.00
  Misc               0         0        0           0   0.00  *       0     0.00  *        0          0      0.00
  Sub Total==) 343,848         0        0     343,848  46.83  * 213,848    64.87  *        0          0      0.00
Ceiling Load         0         0                   0   0.00  *       0     0.00  *        0          0      0.00
Outside Air          0         0        0     273,690  37.27  *       0     0.00  *        0    -299,546     78.04
Sup. Fan Heat                                      0   0.00  *             0.00  *                0      0.00
Ret. Fan Heat                  0                   0   0.00  *             0.00  *                0      0.00
Duct Heat Pkup                 0                   0   0.00  *             0.00  *                0      0.00
OV/UNDR Sizing       0                             0   0.00  *       0     0.00  *        0          0      0.00
Exhaust Heat                   0        0          0   0.00  *             0.00  *                0      0.00
Terminal Bypass                0        0          0   0.00  *             0.00  *                0      0.00
                                                             *                       *
Grand Total==) 460,628         0        0     734,319 100.00  * 329,641   100.00  *  -84,305   -383,851    100.00
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--------------------------------COOLING COIL SELECTION----------------------------------      --------------AREAS--------------
          Total Capacity  Sens Cap.  Coil Airfl   Entering DB/WB/HR     Leaving DB/WB/HR      Gross Total   Glass (sf) (%)
          (Tons)  (Mbh)    (Mbh)      (cfm)    Deg F Deg F Grains   Deg F Deg F Grains     Floor    11,704
Main Clg   61.2  734.3    467.2      14,856    83.7  69.6  86.5     55.0  54.2  61.7      Part         0
Aux  Clg    0.0    0.0      0.0           0     0.0   0.0   0.0      0.0   0.0   0.0      ExFlr        0
Opt Vent    0.0    0.0      0.0           0     0.0   0.0   0.0      0.0   0.0   0.0      Roof    11,704          0    0
Totals     61.2  734.3                                                                   Wall     4,185        685   16
```

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-----------HEATING COIL SELECTION-------------   --------AIRFLOWS (cfm)--------   --ENGINEERING CHECKS--   --TEMPERATURES (F)---
          Capacity  Coil Airfl   Ent    Lvg      Type    Cooling   Heating     Clg % OA       40.4     Type    Clg   Htg
          (Mbh)     (cfm)      Deg F  Deg F     Vent      6,000     6,000     Clg Cfm/Sqft    1.27     SADB    55.0  73.1
Main Htg  -383.9    14,856     49.8   73.1      Infil       335       418     Clg Cfm/Ton   242.78     Plenum  75.0  68.0
Aux  Htg     0.0         0      0.0    0.0      Supply   14,856    14,856     Clg Sqft/Ton  191.26     Return  75.0  68.0
Preheat    -85.3    14,856     49.8   55.0      Mincfm        0         0     Clg Btuh/Sqft  62.74     Ret/OA  83.7  49.8
Reheat       0.0         0      0.0    0.0      Return   14,856    14,856     No. People      400     Runarnd 75.0  68.0
Humidif      0.0         0      0.0    0.0      Exhaust   6,000     6,000     Htg % OA       40.4     Fn MtrTD 0.0   0.0
Opt Vent     0.0         0      0.0    0.0      Rm Exh        0         0     Htg Cfm/SqFt    1.27     Fn BldTD 0.0   0.0
Total     -383.9                               Auxil         0         0     Htg Btuh/SqFt -32.80     Fn Frict 0.0   0.0
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BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

January			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-278,484	0.0	-44,040	0.0	-142,305	0.0	-142,305	0.0	-142,305	0.0
2	32.9	30.7	-110,168	0.0	-44,584	0.0	-140,353	0.0	-140,353	0.0	-140,353	0.0
3	33.1	31.3	-76,684	0.0	-156,578	0.0	-141,869	0.0	-141,869	0.0	-141,869	0.0
4	33.9	32.1	-82,255	0.0	-136,626	0.0	-136,323	0.0	-136,323	0.0	-136,323	0.0
5	35.2	33.5	-85,333	0.0	-127,836	0.0	-127,594	0.0	-127,594	0.0	-127,594	0.0
6	37.0	35.4	-81,577	0.0	-115,082	0.0	-114,889	0.0	-114,889	0.0	-114,889	0.0
7	39.0	37.6	-72,430	0.0	-98,743	0.0	-98,590	0.0	-98,590	0.0	-98,590	0.0
8	41.3	40.1	-56,541	0.0	-80,520	0.0	-80,398	0.0	-80,398	0.0	-80,398	0.0
9	43.7	42.5	-41,800	0.0	-52,123	0.0	-52,026	0.0	-52,026	0.0	-52,026	0.0
10	46.1	44.0	-38,451	0.0	-36,169	0.0	-36,092	0.0	-36,092	0.0	-36,092	0.0
11	48.4	45.0	-34,328	0.0	-34,051	0.0	-33,989	0.0	-33,989	0.0	-33,989	0.0
12	50.5	45.6	-29,783	7.6	-28,097	0.0	-27,780	0.0	-27,780	0.0	-27,780	0.0
13	52.2	46.1	-23,837	13.0	-21,710	0.0	-21,710	0.0	-21,710	0.0	-21,710	0.0
14	53.5	46.4	-5,666	14.9	-18,428	2.5	-18,428	2.5	-18,428	2.5	-18,428	2.5
15	54.3	46.3	-2,143	16.0	-17,131	7.0	-17,131	7.0	-17,131	7.0	-17,131	7.0
16	54.6	46.1	-1,261	15.7	-15,191	7.4	-15,191	7.4	-15,191	7.4	-15,191	7.4
17	54.0	45.9	-3,525	14.6	-16,201	6.9	-16,201	6.9	-16,201	6.9	-16,201	6.9
18	52.5	45.0	-8,075	11.6	-17,722	5.4	-17,722	5.4	-17,722	5.4	-17,722	5.4
19	50.1	44.8	-15,178	8.5	-20,528	3.2	-20,528	3.2	-20,528	3.2	-20,528	3.2
20	47.1	43.3	-22,038	5.6	-25,678	0.5	-25,678	0.5	-25,678	0.5	-25,678	0.5
21	43.7	40.4	-27,693	3.3	-30,535	0.0	-30,535	0.0	-30,535	0.0	-30,535	0.0
22	40.4	37.3	-32,624	1.3	-35,865	0.0	-35,865	0.0	-35,865	0.0	-35,865	0.0
23	37.3	34.9	-33,982	0.0	-38,720	0.0	-38,720	0.0	-38,720	0.0	-38,720	0.0
24	34.9	32.6	-35,232	0.0	-42,245	0.0	-42,245	0.0	-42,245	0.0	-42,245	0.0

February			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-35,285	0.0	-38,005	0.0	-35,614	0.0	-35,614	0.0	-35,614	0.0
2	39.7	37.1	-41,846	0.0	-38,294	0.0	-37,557	0.0	-37,557	0.0	-37,557	0.0
3	37.8	35.1	-52,148	0.0	-40,306	0.0	-40,306	0.0	-40,306	0.0	-40,306	0.0
4	36.3	33.8	-60,179	0.0	-77,588	0.0	-97,584	0.0	-97,584	0.0	-97,584	0.0
5	35.1	32.6	-64,395	0.0	-124,445	0.0	-124,445	0.0	-124,445	0.0	-124,445	0.0
6	34.4	32.0	-64,050	0.0	-131,267	0.0	-131,267	0.0	-131,267	0.0	-131,267	0.0
7	34.1	31.9	-56,508	0.0	-136,219	0.0	-136,219	0.0	-136,219	0.0	-136,219	0.0
8	34.6	32.4	-38,962	0.0	-131,699	0.0	-131,699	0.0	-131,699	0.0	-131,699	0.0
9	36.0	33.8	-37,309	0.0	-112,171	0.0	-112,171	0.0	-112,171	0.0	-112,171	0.0
10	38.2	34.7	-34,821	0.0	-86,690	0.0	-86,690	0.0	-86,690	0.0	-86,690	0.0
11	40.9	36.2	-31,356	0.0	-56,287	0.0	-56,287	0.0	-56,287	0.0	-56,287	0.0
12	43.9	37.4	-25,057	9.2	-37,586	0.0	-37,586	0.0	-37,586	0.0	-37,586	0.0
13	46.9	39.4	-7,891	12.6	-34,830	0.0	-34,830	0.0	-34,830	0.0	-34,830	0.0
14	49.7	41.4	-3,433	14.3	-25,613	0.0	-25,613	0.0	-25,613	0.0	-25,613	0.0
15	51.8	42.8	-773	15.5	-20,579	0.0	-20,579	0.0	-20,579	0.0	-20,579	0.0
16	53.2	43.9	0	15.5	-19,233	4.0	-19,233	4.0	-19,233	4.0	-19,233	4.0
17	53.7	44.2	-710	14.7	-17,480	6.7	-17,480	6.7	-17,480	6.7	-17,480	6.7
18	53.4	44.4	-5,125	12.6	-17,617	6.2	-17,617	6.2	-17,617	6.2	-17,617	6.2
19	52.7	44.4	-12,116	9.2	-19,298	4.9	-19,298	4.9	-19,298	4.9	-19,298	4.9
20	51.5	45.2	-19,227	6.3	-22,530	3.5	-22,530	3.5	-22,530	3.5	-22,530	3.5
21	50.0	44.6	-26,363	3.9	-24,531	2.2	-24,531	2.2	-24,531	2.2	-24,531	2.2
22	48.1	43.3	-31,301	2.0	-28,103	0.6	-28,103	0.6	-28,103	0.6	-28,103	0.6
23	46.1	41.8	-33,524	0.5	-29,957	0.0	-29,957	0.0	-29,957	0.0	-29,957	0.0
24	43.9	40.1	-34,526	0.0	-33,178	0.0	-33,178	0.0	-33,178	0.0	-33,178	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

March			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-21,762	2.8	0	3.0	-22,604	3.2	-22,604	3.2	-22,604	3.2
2	48.7	44.6	-23,915	4.7	-16,506	0.8	-25,493	0.8	-25,493	0.8	-25,493	0.8
3	46.6	42.9	-26,575	3.7	-28,506	0.0	-28,506	0.0	-28,506	0.0	-28,506	0.0
4	44.9	41.4	-28,010	3.0	-30,560	0.0	-30,560	0.0	-30,560	0.0	-30,560	0.0
5	43.9	40.8	-28,734	2.7	-32,939	0.0	-32,939	0.0	-32,939	0.0	-32,939	0.0
6	43.5	40.8	-28,385	2.9	-33,851	0.0	-33,851	0.0	-33,851	0.0	-33,851	0.0
7	44.0	41.4	-27,208	3.6	-33,118	0.0	-33,118	0.0	-33,118	0.0	-33,118	0.0
8	45.4	42.7	-24,601	5.9	-32,414	0.0	-32,414	0.0	-32,414	0.0	-32,414	0.0
9	47.7	44.3	-19,091	9.8	-29,792	0.0	-29,792	0.0	-29,792	0.0	-29,792	0.0
10	50.6	45.8	-10,059	14.1	-23,884	0.0	-23,884	0.0	-23,884	0.0	-23,884	0.0
11	53.9	47.4	0	18.0	-19,014	1.9	-19,014	1.9	-19,014	1.9	-19,014	1.9
12	57.4	49.0	0	21.5	-12,346	9.3	-12,346	9.3	-12,346	9.3	-12,346	9.3
13	60.7	50.8	0	24.1	-7,488	12.6	-7,488	12.6	-7,488	12.6	-7,488	12.6
14	63.6	52.7	0	26.1	-2,785	15.3	-2,785	15.3	-2,785	15.3	-2,785	15.3
15	65.9	53.7	0	27.3	0	16.9	0	16.9	0	16.9	0	16.9
16	67.3	54.4	0	27.4	0	18.0	0	18.0	0	18.0	0	18.0
17	67.8	54.6	0	25.1	0	18.3	0	18.3	0	18.3	0	18.3
18	67.4	54.8	0	23.2	0	17.6	0	17.6	0	17.6	0	17.6
19	66.4	55.2	0	19.2	0	17.4	0	17.4	0	17.4	0	17.4
20	64.7	56.0	0	15.5	0	17.1	0	17.1	0	17.1	0	17.1
21	62.5	56.0	0	13.3	0	15.1	0	15.1	0	15.1	0	15.1
22	60.0	54.1	0	10.4	-5,171	12.6	-5,171	12.6	-5,171	12.6	-5,171	12.6
23	57.1	51.9	0	8.4	-14,983	9.1	-14,983	9.1	-14,983	9.1	-14,983	9.1
24	54.2	49.4	0	7.1	-18,591	5.6	-18,591	5.6	-18,591	5.6	-18,591	5.6

April			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	-5,621	15.0	0	14.0	0	14.5	0	14.5	0	14.5
2	58.9	54.9	-7,774	13.9	0	11.7	0	11.6	0	11.6	0	11.6
3	57.0	53.5	-10,434	13.0	0	9.6	0	9.6	0	9.6	0	9.6
4	55.4	52.4	-11,632	12.3	0	8.1	0	8.1	0	8.1	0	8.1
5	54.2	51.4	-12,475	11.9	0	6.2	-12,118	6.2	-12,118	6.2	-12,118	6.2
6	53.5	50.9	-12,126	12.1	-16,389	5.3	-19,773	5.3	-19,773	5.3	-19,773	5.3
7	53.2	51.1	-11,066	14.5	-20,375	5.2	-20,375	5.2	-20,375	5.2	-20,375	5.2
8	53.9	51.5	-7,229	17.5	-19,187	7.0	-19,187	7.0	-19,187	7.0	-19,187	7.0
9	55.9	52.1	-981	20.8	-16,105	8.7	-16,105	8.7	-16,105	8.7	-16,105	8.7
10	58.9	53.2	0	24.5	-10,309	11.9	-10,309	11.9	-10,309	11.9	-10,309	11.9
11	62.6	55.2	0	28.2	-3,635	16.7	-3,635	16.7	-3,635	16.7	-3,635	16.7
12	66.5	57.3	0	33.3	0	20.3	0	20.3	0	20.3	0	20.3
13	70.2	59.6	0	36.0	0	23.0	0	23.0	0	23.0	0	23.0
14	73.2	61.0	0	38.0	0	27.4	0	27.4	0	27.4	0	27.4
15	75.2	62.2	0	41.7	0	29.5	0	29.5	0	29.5	0	29.5
16	75.9	62.2	0	39.8	0	29.8	0	29.8	0	29.8	0	29.8
17	75.6	62.0	0	38.5	0	29.6	0	29.6	0	29.6	0	29.6
18	74.9	61.7	0	34.2	0	28.9	0	28.9	0	28.9	0	28.9
19	73.7	62.0	0	30.1	0	27.2	0	27.2	0	27.2	0	27.2
20	72.1	62.4	0	25.9	0	26.7	0	26.7	0	26.7	0	26.7
21	70.2	63.3	0	23.8	0	26.4	0	26.4	0	26.4	0	26.4
22	68.0	62.5	0	21.4	0	24.4	0	24.4	0	24.4	0	24.4
23	65.7	60.5	0	17.9	0	20.6	0	20.6	0	20.6	0	20.6
24	63.4	58.5	0	16.2	0	16.8	0	16.8	0	16.8	0	16.8

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

May			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	24.0	0	24.6	0	25.5	0	25.5	0	25.5
2	65.7	61.5	0	22.5	0	21.8	0	21.7	0	21.7	0	21.7
3	63.6	59.7	0	21.5	0	18.0	0	18.0	0	18.0	0	18.0
4	61.8	58.4	0	20.6	0	16.1	0	16.1	0	16.1	0	16.1
5	60.5	57.1	0	18.8	0	13.7	0	13.7	0	13.7	0	13.7
6	59.7	56.5	0	20.2	0	12.6	0	12.6	0	12.6	0	12.6
7	59.4	56.5	0	22.2	0	12.9	0	12.9	0	12.9	0	12.9
8	60.1	56.3	0	25.0	0	14.3	0	14.3	0	14.3	0	14.3
9	62.4	56.3	0	28.6	-2,164	15.3	-4,043	15.3	-4,043	15.3	-4,043	15.3
10	65.7	57.2	0	32.2	-1,367	18.4	-1,367	18.4	-1,367	18.4	-1,367	18.4
11	69.9	58.9	0	36.1	0	22.0	0	22.0	0	22.0	0	22.0
12	74.3	60.9	0	41.2	0	25.5	0	25.5	0	25.5	0	25.5
13	78.5	63.7	0	47.2	0	30.5	0	30.5	0	30.5	0	30.5
14	81.9	65.3	0	47.9	0	35.5	0	35.5	0	35.5	0	35.5
15	84.1	66.9	0	51.1	0	37.9	0	37.9	0	37.9	0	37.9
16	84.9	67.1	0	49.3	0	39.1	0	39.1	0	39.1	0	39.1
17	84.6	67.3	0	47.9	0	40.7	0	40.7	0	40.7	0	40.7
18	83.8	67.1	0	43.4	0	41.7	0	41.7	0	41.7	0	41.7
19	82.4	67.5	0	39.4	0	39.8	0	39.8	0	39.8	0	39.8
20	80.6	68.9	0	37.0	0	40.9	0	40.9	0	40.9	0	40.9
21	78.5	71.0	0	35.0	0	42.4	0	42.4	0	42.4	0	42.4
22	76.1	69.9	0	31.8	0	37.7	0	37.7	0	37.7	0	37.7
23	73.4	68.0	0	29.1	0	32.5	0	32.5	0	32.5	0	32.5
24	70.8	65.5	0	25.5	0	28.1	0	28.1	0	28.1	0	28.1

June			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	37.7	0	36.7	0	37.4	0	37.4	0	37.4
2	72.6	68.4	0	36.0	0	33.3	0	33.1	0	33.1	0	33.1
3	70.9	67.3	0	35.1	0	31.2	0	31.3	0	31.3	0	31.3
4	69.6	66.5	0	34.0	0	28.3	0	28.2	0	28.2	0	28.2
5	68.7	65.8	0	33.7	0	27.0	0	27.1	0	27.1	0	27.1
6	68.5	65.7	0	33.8	0	26.8	0	26.8	0	26.8	0	26.8
7	69.0	66.3	0	37.5	0	27.7	0	27.7	0	27.7	0	27.7
8	70.6	66.9	0	40.9	0	29.9	0	29.9	0	29.9	0	29.9
9	73.0	67.7	0	44.9	0	32.8	0	32.8	0	32.8	0	32.8
10	76.1	68.1	0	49.2	0	36.4	0	36.4	0	36.4	0	36.4
11	79.5	69.1	0	53.4	0	39.7	0	39.7	0	39.7	0	39.7
12	82.9	70.1	0	57.1	0	44.3	0	44.3	0	44.3	0	44.3
13	86.0	71.0	0	60.0	0	47.9	0	48.0	0	48.0	0	48.0
14	88.4	72.5	0	62.1	0	53.0	0	53.0	0	53.0	0	53.0
15	90.0	74.0	0	63.5	0	57.5	0	57.5	0	57.5	0	57.5
16	90.5	73.7	0	63.6	0	55.8	0	55.8	0	55.8	0	55.8
17	90.3	74.2	0	62.7	0	57.7	0	57.7	0	57.7	0	57.7
18	89.4	73.9	0	58.1	0	57.0	0	57.0	0	57.0	0	57.0
19	88.1	74.5	0	54.6	0	55.0	0	55.0	0	55.0	0	55.0
20	86.4	75.3	0	50.2	0	54.2	0	54.2	0	54.2	0	54.2
21	84.3	76.5	0	48.6	0	55.4	0	55.4	0	55.4	0	55.4
22	81.9	75.7	0	45.6	0	52.5	0	52.5	0	52.5	0	52.5
23	79.5	74.0	0	43.0	0	47.4	0	47.4	0	47.4	0	47.4
24	77.0	72.1	0	41.3	0	42.3	0	42.3	0	42.3	0	42.3

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

SINGLE ZONE SYSTEMS

July			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	41.0	0	35.5	0	36.1	0	36.1	0	36.1
2	72.4	69.4	0	38.8	0	34.6	0	34.4	0	34.4	0	34.4
3	71.3	68.4	0	38.0	0	31.5	0	31.5	0	31.5	0	31.5
4	70.5	67.7	0	37.3	0	30.4	0	30.4	0	30.4	0	30.4
5	70.0	67.4	0	36.9	0	30.0	0	30.0	0	30.0	0	30.0
6	69.9	67.5	0	36.8	0	29.6	0	29.6	0	29.6	0	29.6
7	70.3	68.0	0	40.4	0	30.4	0	30.4	0	30.4	0	30.4
8	71.7	69.0	0	43.2	0	34.4	0	34.4	0	34.4	0	34.4
9	73.7	69.5	0	46.7	0	37.2	0	37.2	0	37.2	0	37.2
10	76.2	70.6	0	50.2	0	40.6	0	40.6	0	40.6	0	40.6
11	78.9	71.8	0	53.7	0	43.5	0	43.5	0	43.5	0	43.5
12	81.4	73.0	0	59.3	0	50.3	0	50.3	0	50.3	0	50.3
13	83.4	74.4	0	61.7	0	53.7	0	53.7	0	53.7	0	53.7
14	84.8	74.8	0	63.2	0	55.3	0	55.3	0	55.3	0	55.3
15	85.2	75.0	0	64.6	0	56.5	0	56.5	0	56.5	0	56.5
16	85.1	75.0	0	64.7	0	56.5	0	56.5	0	56.5	0	56.5
17	84.6	74.7	0	64.2	0	55.8	0	55.8	0	55.8	0	55.8
18	83.8	74.6	0	59.9	0	54.7	0	54.7	0	54.7	0	54.7
19	82.7	74.6	0	56.9	0	54.9	0	54.9	0	54.9	0	54.9
20	81.4	74.4	0	53.1	0	52.4	0	52.4	0	52.4	0	52.4
21	79.9	74.9	0	49.7	0	51.4	0	51.4	0	51.4	0	51.4
22	78.4	74.0	0	46.9	0	46.8	0	46.8	0	46.8	0	46.8
23	76.8	72.7	0	45.0	0	42.1	0	42.1	0	42.1	0	42.1
24	75.2	71.6	0	43.5	0	39.9	0	39.9	0	39.9	0	39.9

August			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	40.5	0	38.8	0	39.5	0	39.5	0	39.5
2	73.2	70.3	0	38.0	0	35.5	0	35.3	0	35.3	0	35.3
3	71.7	68.9	0	37.1	0	33.7	0	33.8	0	33.8	0	33.8
4	70.4	67.8	0	36.2	0	30.7	0	30.7	0	30.7	0	30.7
5	69.5	66.8	0	33.9	0	29.6	0	29.6	0	29.6	0	29.6
6	68.9	66.4	0	35.6	0	27.3	0	27.3	0	27.3	0	27.3
7	68.7	66.4	0	37.0	0	27.0	0	27.0	0	27.0	0	27.0
8	69.2	66.8	0	41.6	0	30.1	0	30.1	0	30.1	0	30.1
9	70.8	67.7	0	45.8	0	32.6	0	32.6	0	32.6	0	32.6
10	73.2	67.7	0	49.9	0	34.2	0	34.2	0	34.2	0	34.2
11	76.2	68.8	0	54.1	0	37.2	0	37.2	0	37.2	0	37.2
12	79.3	70.3	0	57.5	0	42.4	0	42.4	0	42.4	0	42.4
13	82.3	72.2	0	62.4	0	49.2	0	49.2	0	49.2	0	49.2
14	84.7	73.7	0	64.9	0	52.7	0	52.7	0	52.7	0	52.7
15	86.3	74.6	0	66.2	0	57.2	0	57.2	0	57.2	0	57.2
16	86.8	75.1	0	66.3	0	57.9	0	57.9	0	57.9	0	57.9
17	86.6	75.1	0	63.0	0	57.7	0	57.7	0	57.7	0	57.7
18	86.0	75.3	0	60.5	0	59.3	0	59.3	0	59.3	0	59.3
19	85.1	76.0	0	56.9	0	56.9	0	56.9	0	56.9	0	56.9
20	83.8	76.8	0	52.9	0	56.2	0	56.2	0	56.2	0	56.2
21	82.3	77.2	0	51.6	0	55.8	0	55.8	0	55.8	0	55.8
22	80.6	76.3	0	46.7	0	53.2	0	53.2	0	53.2	0	53.2
23	78.7	75.3	0	44.4	0	48.5	0	48.5	0	48.5	0	48.5
24	76.8	73.7	0	42.7	0	43.9	0	43.9	0	43.9	0	43.9

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

September			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	30.2	0	29.6	0	30.3	0	30.3	0	30.3
2	67.6	65.0	0	27.8	0	26.9	0	26.7	0	26.7	0	26.7
3	65.8	63.4	0	25.4	0	23.1	0	23.2	0	23.2	0	23.2
4	64.3	62.2	0	24.4	0	21.5	0	21.5	0	21.5	0	21.5
5	63.1	61.1	0	24.1	0	18.9	0	18.9	0	18.9	0	18.9
6	62.4	60.3	0	24.2	0	17.7	0	17.7	0	17.7	0	17.7
7	62.2	60.2	0	26.6	0	17.5	0	17.5	0	17.5	0	17.5
8	62.9	60.9	0	29.6	0	18.9	0	18.9	0	18.9	0	18.9
9	64.7	61.8	0	34.9	0	21.4	0	21.4	0	21.4	0	21.4
10	67.6	62.1	0	39.1	0	25.0	0	25.0	0	25.0	0	25.0
11	71.1	63.1	0	42.5	0	28.7	0	28.7	0	28.7	0	28.7
12	74.8	64.6	0	46.4	0	32.4	0	32.4	0	32.4	0	32.4
13	78.3	66.7	0	51.5	0	35.5	0	35.5	0	35.5	0	35.5
14	81.2	68.4	0	54.1	0	40.3	0	40.3	0	40.3	0	40.3
15	83.0	70.0	0	55.5	0	44.1	0	44.1	0	44.1	0	44.1
16	83.7	70.5	0	55.6	0	45.1	0	45.0	0	45.0	0	45.0
17	83.4	70.5	0	52.0	0	46.9	0	46.9	0	46.9	0	46.9
18	82.8	70.9	0	48.9	0	47.5	0	47.5	0	47.5	0	47.5
19	81.6	72.7	0	46.8	0	47.2	0	47.2	0	47.2	0	47.2
20	80.1	74.7	0	45.0	0	49.1	0	49.1	0	49.1	0	49.1
21	78.3	74.1	0	41.6	0	46.6	0	46.6	0	46.6	0	46.6
22	76.3	72.4	0	36.7	0	41.6	0	41.6	0	41.6	0	41.6
23	74.1	70.7	0	32.4	0	36.9	0	36.9	0	36.9	0	36.9
24	71.8	68.9	0	30.5	0	32.6	0	32.6	0	32.6	0	32.6

October			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	9.2	0	4.7	-19,921	5.0	-19,921	5.0	-19,921	5.0
2	50.1	48.6	0	7.0	-839	2.8	-22,335	2.8	-22,335	2.8	-22,335	2.8
3	48.4	46.9	0	6.2	-24,131	0.8	-24,131	0.8	-24,131	0.8	-24,131	0.8
4	47.1	45.8	0	5.5	-27,047	0.0	-27,047	0.0	-27,047	0.0	-27,047	0.0
5	46.3	44.8	-19,413	5.1	-28,369	0.0	-28,369	0.0	-28,369	0.0	-28,369	0.0
6	46.0	44.5	-24,936	5.3	-29,747	0.0	-29,747	0.0	-29,747	0.0	-29,747	0.0
7	46.8	45.3	-23,639	6.0	-29,893	0.0	-29,893	0.0	-29,893	0.0	-29,893	0.0
8	48.9	47.5	-21,033	9.4	-28,657	0.0	-28,657	0.0	-28,657	0.0	-28,657	0.0
9	52.2	49.9	-14,299	13.6	-23,654	1.8	-23,654	1.8	-23,654	1.8	-23,654	1.8
10	56.2	52.5	-6,616	17.6	-18,212	10.3	-18,212	10.3	-18,212	10.3	-18,212	10.3
11	60.4	54.4	0	21.7	-11,170	14.7	-11,170	14.7	-11,170	14.7	-11,170	14.7
12	64.4	56.0	0	25.2	-4,102	18.3	-4,102	18.3	-4,102	18.3	-4,102	18.3
13	67.7	57.3	0	27.8	0	21.1	0	21.1	0	21.1	0	21.1
14	69.8	58.2	0	30.1	0	22.9	0	22.9	0	22.9	0	22.9
15	70.6	58.1	0	31.2	0	23.9	0	23.9	0	23.9	0	23.9
16	70.3	57.5	0	31.1	0	22.3	0	22.3	0	22.3	0	22.3
17	69.5	57.3	0	28.7	0	21.2	0	21.2	0	21.2	0	21.2
18	68.2	57.7	0	26.9	0	21.0	0	21.0	0	21.0	0	21.0
19	66.5	60.6	0	24.5	0	22.2	0	22.2	0	22.2	0	22.2
20	64.4	60.8	0	21.0	0	21.8	0	21.8	0	21.8	0	21.8
21	62.1	59.4	0	18.1	0	18.1	0	18.1	0	18.1	0	18.1
22	59.6	57.3	0	14.3	0	14.1	0	14.1	0	14.1	0	14.1
23	57.0	55.1	0	12.1	-8,753	11.5	-8,753	11.5	-8,753	11.5	-8,753	11.5
24	54.5	52.7	0	10.7	-16,279	8.2	-16,279	8.2	-16,279	8.2	-16,279	8.2

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

November			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-22,967	5.8	-7,322	4.2	-20,429	4.5	-20,429	4.5	-20,429	4.5
2	49.4	47.3	-24,995	4.2	-23,127	1.8	-23,127	1.8	-23,127	1.8	-23,127	1.8
3	47.2	45.3	-27,892	3.2	-26,709	0.0	-26,709	0.0	-26,709	0.0	-26,709	0.0
4	45.3	43.4	-29,326	2.5	-29,051	0.0	-29,051	0.0	-29,051	0.0	-29,051	0.0
5	43.9	42.2	-29,926	2.1	-30,441	0.0	-30,441	0.0	-30,441	0.0	-30,441	0.0
6	43.0	41.4	-29,702	2.4	-32,809	0.0	-32,809	0.0	-32,809	0.0	-32,809	0.0
7	42.7	41.2	-29,268	3.1	-33,526	0.0	-33,526	0.0	-33,526	0.0	-33,526	0.0
8	43.5	42.0	-25,318	5.4	-33,423	0.0	-33,423	0.0	-33,423	0.0	-33,423	0.0
9	45.9	44.0	-20,928	9.5	-31,647	0.0	-31,647	0.0	-31,647	0.0	-31,647	0.0
10	49.4	46.6	-12,515	14.7	-27,187	0.0	-27,187	0.0	-27,187	0.0	-27,187	0.0
11	53.8	48.6	-3,278	19.6	-20,188	0.0	-20,188	0.0	-20,188	0.0	-20,188	0.0
12	58.4	50.6	0	23.4	-14,163	8.3	-14,163	8.3	-14,163	8.3	-14,163	8.3
13	62.8	52.6	0	26.4	-7,448	13.5	-7,448	13.5	-7,448	13.5	-7,448	13.5
14	66.3	54.5	0	27.1	-2,418	16.3	-2,418	16.3	-2,418	16.3	-2,418	16.3
15	68.7	55.7	0	28.0	0	19.7	0	19.7	0	19.7	0	19.7
16	69.5	56.1	0	27.9	0	20.8	0	20.8	0	20.8	0	20.8
17	69.2	55.8	0	26.1	0	18.8	0	18.8	0	18.8	0	18.8
18	68.3	57.0	0	22.6	0	18.4	0	18.4	0	18.4	0	18.4
19	66.9	59.4	0	20.4	0	20.0	0	20.0	0	20.0	0	20.0
20	65.0	59.4	0	17.3	0	19.9	0	19.9	0	19.9	0	19.9
21	62.8	58.2	0	13.2	-4,678	16.7	-4,678	16.7	-4,678	16.7	-4,678	16.7
22	60.2	56.1	0	10.7	-10,654	14.0	-10,654	14.0	-10,654	14.0	-10,654	14.0
23	57.5	54.0	0	8.7	-13,926	10.7	-13,926	10.7	-13,926	10.7	-13,926	10.7
24	54.7	51.7	0	7.2	-16,834	7.0	-16,834	7.0	-16,834	7.0	-16,834	7.0

December			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-29,794	2.6	-30,225	0.0	-30,225	0.0	-30,225	0.0	-30,225	0.0
2	43.2	41.1	-31,466	1.5	-33,561	0.0	-33,561	0.0	-33,561	0.0	-33,561	0.0
3	41.8	39.8	-32,217	0.8	-34,785	0.0	-34,785	0.0	-34,785	0.0	-34,785	0.0
4	40.7	38.7	-32,915	0.0	-35,947	0.0	-35,947	0.0	-35,947	0.0	-35,947	0.0
5	40.1	38.4	-33,421	0.0	-37,669	0.0	-37,669	0.0	-37,669	0.0	-37,669	0.0
6	39.9	38.4	-33,359	0.0	-60,558	0.0	-63,219	0.0	-63,219	0.0	-63,219	0.0
7	40.5	39.0	-32,886	0.6	-80,048	0.0	-80,048	0.0	-80,048	0.0	-80,048	0.0
8	42.2	40.7	-31,749	1.8	-66,642	0.0	-66,642	0.0	-66,642	0.0	-66,642	0.0
9	44.9	43.4	-29,880	5.1	-35,147	0.0	-35,147	0.0	-35,147	0.0	-35,147	0.0
10	48.2	45.8	-27,404	8.9	-31,367	0.0	-31,367	0.0	-31,367	0.0	-31,367	0.0
11	51.7	48.3	-16,575	12.5	-24,769	0.0	-24,769	0.0	-24,769	0.0	-24,769	0.0
12	55.0	50.7	-7,050	17.0	-19,537	0.0	-19,537	0.0	-19,537	0.0	-19,537	0.0
13	57.7	52.0	-1,526	19.8	-14,154	8.3	-14,154	8.3	-14,154	8.3	-14,154	8.3
14	59.5	52.6	0	20.2	-11,037	13.1	-11,037	13.1	-11,037	13.1	-11,037	13.1
15	60.1	52.7	0	21.1	-9,367	13.7	-9,367	13.7	-9,367	13.7	-9,367	13.7
16	59.9	52.6	0	21.0	-7,883	14.0	-7,883	14.0	-7,883	14.0	-7,883	14.0
17	59.2	52.1	0	19.5	-8,802	13.1	-8,802	13.1	-8,802	13.1	-8,802	13.1
18	58.2	51.8	0	16.5	-10,400	11.5	-10,400	11.5	-10,400	11.5	-10,400	11.5
19	56.8	52.2	0	13.6	-12,910	9.7	-12,910	9.7	-12,910	9.7	-12,910	9.7
20	55.0	51.4	-5,463	10.9	-16,766	7.6	-16,766	7.6	-16,766	7.6	-16,766	7.6
21	53.1	50.1	-18,030	8.6	-19,816	5.9	-19,816	5.9	-19,816	5.9	-19,816	5.9
22	51.0	48.1	-22,480	6.0	-22,328	3.3	-22,328	3.3	-22,328	3.3	-22,328	3.3
23	48.9	46.2	-25,107	4.5	-26,050	1.3	-26,050	1.3	-26,050	1.3	-26,050	1.3
24	46.9	44.1	-28,122	3.3	-27,973	0.0	-27,973	0.0	-27,973	0.0	-27,973	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 24414 (1 BUILDING)

-----CARD 08-- Climatic Information ---

Weather Code	Summer Clearness Number	Winter Clearness Number	Summer Design Dry Bulb	Summer Design Wet Bulb	Winter Design Dry Bulb	Building Orientation	Summer Ground Reflect	Winter Ground Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods---------------------------------------

1st Month Cooling Simulation	Last Month Cooling Simulation	Peak Cooling Load Hr	1st Month Summer Period	Last Month Summer Period	1st Month Daylight Savings	Last Month Daylight Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters----------------------------

Cooling Load Method	Heating Load Method	Ventilation Method	Airflow Input Units	Airflow Output Units	Room Circulation Rate	Put Wall RA Load to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

--------------------- Load Section Alternative #1 ---------------------

---- Load Alternative ----
Number	Description
1	DINNING FACILITY

-----CARD 20-- General Room Parameters --

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
1	1	KITCHEN	6015		2	0		11			

-----CARD 20-- General Room Parameters ---

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	2	DINNING ROOM	11704		2	0		16			

-----CARD 21-- Thermostat Parameters ---

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO
2		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters ---

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				5			
2	1	YES				5			

-----CARD 24-- Wall Parameters ---

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	100.75	14		49	0			
1	2	116.75	14		49	90			
1	3	116.75	14		49	270			
2	1	60	19		49	90			
2	2	100.25	19		49	180			
2	3	60	19		49	270			

-----CARD 25-- Wall/Glass Parameters ---

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
2	1	24.6	10	1	1.03	.94					
2	2	3.75	1.5	39	1.03	.94					
2	3	3.75	1.5	39	1.03	.94					

----CARD 26-- Schedules --

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

----CARD 27-- People and Lights --

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	Daylighting Reference Point 1	Reference Point 2
1	40	PEOPLE	255	325	2.8	WATT-SF	ASHRAE2				
2	400	PEOPLE	255	325	2.8	WATT-SF	ASHRAE2				

----CARD 28--- Miscellaneous Equipment ---

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	123.2	KW	FGHEAT						
1	2	MISS.GAS	1790	MBH	FGHEAT						

----CARD 29--- Room Airflows ---

Room Number	Ventilation Cooling Value	Ventilation Cooling Units	Ventilation Heating Value	Ventilation Heating Units	Infiltration Cooling Value	Infiltration Cooling Units	Infiltration Heating Value	Infiltration Heating Units	Reheat Minimum Value	Reheat Minimum Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.10	CFM-SF		
2	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

----CARD 30- Fan Airflows --

Room Number	Main Cooling Value	Main Cooling Units	Main Heating Value	Main Heating Units	Auxiliary Cooling Value	Auxiliary Cooling Units	Auxiliary Heating Value	Auxiliary Heating Units	Room Exhaust Value	Room Exhaust Units
1	1	CFM-SF	1	CFM-SF						
2	1	CFM-SF	1	CFM-SF						

----CARD 31-- Partition Parameters ---

Room Number	Partition Number	Partition Length	Partition Height	Partition U-Value	Const Type	Temp Flag	Cooling Temp	Heating Temp	Adjacent Room No
1	1	100.25	14.5	.61					2

--------------------- System Section Alternative #1 ---------------------

----CARD 39-- System Alternative -----

Number	Description
1	SINGLE ZONE SYSTEMS

```
-----CARD 40--- System Type --------------------------------------------------
                 ------------OPTIONAL VENTILATION SYSTEM------------
System              Ventil                                    Fan
Set      System     Deck     Cooling  Heating  Cooling  Heating   Static
Number   Type       Location SADBVh   SADBVh   Schedule Schedule  Pressure
1        SZ
2        SZ
```

```
-----CARD 41-- Zone Assignment --------------------------------------------------------------------
System
Set          Ref #1          Ref #2          Ref #3          Ref #4          Ref #5          Ref #6
Number   Begin   End     Begin   End     Begin   End     Begin   End     Begin   End     Begin   End
1         1       1
2         2       2
```

```
-----CARD 42--- Fan SP and Duct Parameters----------------------------------------------------
System Cool Heat Return Mn Exh Aux  Rm Exh Cool     Return   Supply Supply Return
Set    Fan  Fan  Fan    Fan    Fan  Fan    Fan Mtr  Fan Mtr  Duct   Duct   Air
Number SP   SP   SP     SP     SP   SP     Loc      Loc      Ht Gn  Loc    Path
1
```

Utility Description Reference Table

     Schedules:
          CLGCONST SAMPLE COOLING TSTAT SCHEDULE
          FGHEAT   SCHD FOR HEAT LOAD CALCS
          HTGCONST SAMPLE HEATING TSTAT SCHEDULE
          YES AVAILABLE (100%)
     System:
          SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Temperature
---- ------------
   0   75
  24

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Util Percent
----   ------------
   0   0
  24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Util Percent
----   ------------
   0   0
  24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
   0   100
  24

```
*****************************************************************************
*****************************************************************************
**                                                                       **
**                T R A C E   6 0 0   A N A L Y S I S                     **
**                                                                       **
**               by         **                                           **
**                                                                       **
*****************************************************************************
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```

ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 25410 (6 BUILDINGS)

Weather File Code:	AUGUSTA
Location:	FORT GORDON, GEORGIA
Latitude:	33.0 (deg)
Longitude:	82.0 (deg)
Time Zone:	5
Elevation:	143 (ft)
Barometric Pressure:	29.8 (in. Hg)

Summer Clearness Number:	0.90
Winter Clearness Number:	0.90
Summer Design Dry Bulb:	95 (F)
Summer Design Wet Bulb:	76 (F)
Winter Design Dry Bulb:	23 (F)
Summer Ground Relectance:	0.20
Winter Ground Relectance:	0.20

Air Density:	0.0756 (Lbm/cuft)
Air Specific Heat:	0.2444 (Btu/lbm/F)
Density-Specific Heat Prod:	1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor:	4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor:	4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April   To October
System Simulation Period: January   To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 19:10:10   8/16/94
Dataset Name: FGTYPS35 .TM

System   1   Block   FC   - FAN COIL

*********************** COOLING COIL PEAK ******************************* CLG SPACE PEAK ************ HEATING COIL PEAK ********

						*		*		
Peaked at Time ==)		Mo/Hr: 7/17				*	Mo/Hr: 6/18	*		Mo/Hr: 13/ 1	
Outside Air ==)		OADB/WB/HR: 94/ 75/105.0				*	OADB: 96	*		OADB: 23	
						*		*			
	Space	Ret. Air	Ret. Air	Net	Percnt	*	Space	Percnt	*	Space Peak	Coil Peak	Percnt
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*	Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*	(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	16,233	0		16,233	10.36	*	18,077	14.03	*	-11,688	-11,688	6.93
Glass Solar	45,552	0		45,552	29.07	*	47,424	36.82	*	0	0	0.00
Glass Cond	11,376	0		11,376	7.26	*	13,240	10.28	*	-31,622	-31,622	18.74
Wall Cond	30,026	0		30,026	19.16	*	34,435	26.73	*	-47,243	-47,243	27.99
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	25,925			25,925	16.55	*	15,626	12.13	*	-42,258	-42,258	25.04
Sub Total==)	129,112	0		129,112	82.41	*	128,803	100.00	*	-132,812	-132,812	78.70
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	·0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	27,565	17.59	*	0	0.00	*	0	-35,946	21.30
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==)	129,112	0	0	156,677	100.00	*	128,803	100.00	*	-132,812	-168,757	100.00

-----------------------------------COOLING COIL SELECTION------------------------------------   --------------AREAS--------------

	Total Capacity		Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total		Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	11,085		
Main Clg	13.1	156.7	131.9	11,085	76.2	66.2	81.1	64.5	61.9	79.5	Part	0		
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0		
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	3,695	0	0
Totals	13.1	156.7									Wall	8,465	624	7

------------HEATING COIL SELECTION-------------   --------AIRFLOWS (cfm)--------   --ENGINEERING CHECKS--   --TEMPERATURES (F)---

	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	6.5	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	720	720	Clg Cfm/Sqft	1.00	SADB	64.5	78.8
Main Htg	-168.8	11,085	65.1	78.8	Infil	677	846	Clg Cfm/Ton	849.01	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	11,085	11,085	Clg Sqft/Ton	849.01	Return	75.0	68.0
Preheat .	-0.0	11,085	65.1	64.5	Mincfm	0	0	Clg Btuh/Sqft	14.13	Ret/OA	76.2	65.1
Reheat	0.0	0	0.0	0.0	Return	11,085	11,085	No. People	48	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	720	720	Htg % OA	6.5	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
Total	-168.8				Auxil	0	0	Htg Btuh/SqFt	-15.22	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

January			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-143,645	0.0	-86,992	0.0	-86,992	0.0	-86,992	0.0	-86,992	0.0
2	32.9	30.7	-131,240	0.0	-88,810	0.0	-88,810	0.0	-88,810	0.0	-88,810	0.0
3	33.1	31.3	-122,326	0.0	-93,397	0.0	-93,397	0.0	-93,397	0.0	-93,397	0.0
4	33.9	32.1	-115,864	0.0	-93,252	0.0	-93,252	0.0	-93,252	0.0	-93,252	0.0
5	35.2	33.5	-111,234	0.0	-95,715	0.0	-95,715	0.0	-95,715	0.0	-95,715	0.0
6	37.0	35.4	-101,735	0.0	-94,758	0.0	-94,758	0.0	-94,758	0.0	-94,758	0.0
7	39.0	37.6	-92,435	0.0	-94,557	0.0	-94,557	0.0	-94,557	0.0	-94,557	0.0
8	41.3	40.1	-89,669	0.0	-92,524	0.0	-92,524	0.0	-92,524	0.0	-92,524	0.0
9	43.7	42.5	-75,136	0.0	-84,259	0.0	-84,259	0.0	-84,259	0.0	-84,259	0.0
10	46.1	44.0	-60,985	0.0	-78,263	0.0	-78,263	0.0	-78,263	0.0	-78,263	0.0
11	48.4	45.0	-46,864	0.0	-71,676	0.0	-71,676	0.0	-71,676	0.0	-71,676	0.0
12	50.5	45.6	-37,332	0.0	-69,367	0.0	-69,367	0.0	-69,367	0.0	-69,367	0.0
13	52.2	46.1	-30,975	0.0	-64,056	0.0	-64,056	0.0	-64,056	0.0	-64,056	0.0
14	53.5	46.4	-22,439	0.0	-57,201	0.0	-57,201	0.0	-57,201	0.0	-57,201	0.0
15	54.3	46.3	-11,707	0.0	-51,827	0.0	-51,827	0.0	-51,827	0.0	-51,827	0.0
16	54.6	46.1	-2,161	0.0	-44,034	0.0	-44,034	0.0	-44,034	0.0	-44,034	0.0
17	54.0	45.9	0	0.0	-41,450	0.0	-41,450	0.0	-41,450	0.0	-41,450	0.0
18	52.5	45.0	-7,013	0.0	-42,830	0.0	-42,830	0.0	-42,830	0.0	-42,830	0.0
19	50.1	44.8	-18,670	0.0	-45,310	.0.0	-45,310	0.0	-45,310	0.0	-45,310	0.0
20	47.1	43.3	-28,094	0.0	-50,870	0.0	-50,870	0.0	-50,870	0.0	-50,870	0.0
21	43.7	40.4	-37,784	0.0	-58,027	0.0	-58,027	0.0	-58,027	0.0	-58,027	0.0
22	40.4	37.3	-46,499	0.0	-66,186	0.0	-66,186	0.0	-66,186	0.0	-66,186	0.0
23	37.3	34.9	-53,906	0.0	-73,406	0.0	-73,406	0.0	-73,406	0.0	-73,406	0.0
24	34.9	32.6	-61,981	0.0	-79,871	0.0	-79,871	0.0	-79,871	0.0	-79,871	0.0

February			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-61,133	0.0	-70,278	0.0	-70,278	0.0	-70,278	0.0	-70,278	0.0
2	39.7	37.1	-66,904	0.0	-75,043	0.0	-75,043	0.0	-75,043	0.0	-75,043	0.0
3	37.8	35.1	-73,522	0.0	-80,421	0.0	-80,421	0.0	-80,421	0.0	-80,421	0.0
4	36.3	33.8	-79,598	0.0	-85,146	0.0	-85,146	0.0	-85,146	0.0	-85,146	0.0
5	35.1	32.6	-82,868	0.0	-90,651	0.0	-90,651	0.0	-90,651	0.0	-90,651	0.0
6	34.4	32.0	-85,226	0.0	-92,794	0.0	-92,794	0.0	-92,794	0.0	-92,794	0.0
7	34.1	31.9	-86,176	0.0	-96,092	0.0	-96,092	0.0	-96,092	0.0	-96,092	0.0
8	34.6	32.4	-82,182	0.0	-95,791	0.0	-95,791	0.0	-95,791	0.0	-95,791	0.0
9	36.0	33.8	-65,774	0.0	-89,286	0.0	-89,286	0.0	-89,286	0.0	-89,286	0.0
10	38.2	34.7	-50,552	0.0	-85,381	0.0	-85,381	0.0	-85,381	0.0	-85,381	0.0
11	40.9	36.2	-39,118	0.0	-82,779	0.0	-82,779	0.0	-82,779	0.0	-82,779	0.0
12	43.9	37.4	-30,289	0.0	-79,737	0.0	-79,737	0.0	-79,737	0.0	-79,737	0.0
13	46.9	39.4	-24,794	0.0	-72,155	0.0	-72,155	0.0	-72,155	0.0	-72,155	0.0
14	49.7	41.4	-16,864	0.0	-64,125	0.0	-64,125	0.0	-64,125	0.0	-64,125	0.0
15	51.8	42.8	-5,725	0.0	-55,912	0.0	-55,912	0.0	-55,912	0.0	-55,912	0.0
16	53.2	43.9	0	0.0	-48,569	0.0	-48,569	0.0	-48,569	0.0	-48,569	0.0
17	53.7	44.2	0	0.0	-42,926	0.0	-42,926	0.0	-42,926	0.0	-42,926	0.0
18	53.4	44.4	0	0.0	-39,716	0.0	-39,716	0.0	-39,716	0.0	-39,716	0.0
19	52.7	44.4	0	0.0	-42,208	0.0	-42,208	0.0	-42,208	0.0	-42,208	0.0
20	51.5	45.2	-3,709	0.0	-46,008	0.0	-46,008	0.0	-46,008	0.0	-46,008	0.0
21	50.0	44.6	-27,000	0.0	-49,648	0.0	-49,648	0.0	-49,648	0.0	-49,648	0.0
22	48.1	43.3	-36,588	0.0	-54,103	0.0	-54,103	0.0	-54,103	0.0	-54,103	0.0
23	46.1	41.8	-44,813	0.0	-59,351	0.0	-59,351	0.0	-59,351	0.0	-59,351	0.0
24	43.9	40.1	-53,378	0.0	-62,848	0.0	-62,848	0.0	-62,848	0.0	-62,848	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

March			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-15,983	0.0	0	0.0	-33,738	0.0	-33,738	0.0	-33,738	0.0
2	48.7	44.6	-24,285	0.0	0	0.0	-41,615	0.0	-41,615	0.0	-41,615	0.0
3	46.6	42.9	-31,525	0.0	0	0.0	-47,760	0.0	-47,760	0.0	-47,760	0.0
4	44.9	41.4	-38,102	0.0	-10,418	0.0	-52,513	0.0	-52,513	0.0	-52,513	0.0
5	43.9	40.8	-43,451	0.0	-57,723	0.0	-57,723	0.0	-57,723	0.0	-57,723	0.0
6	43.5	40.8	-45,738	0.0	-61,186	0.0	-61,186	0.0	-61,186	0.0	-61,186	0.0
7	44.0	41.4	-46,684	0.0	-62,149	0.0	-62,149	0.0	-62,149	0.0	-62,149	0.0
8	45.4	42.7	-33,540	0.0	-56,423	0.0	-56,423	0.0	-56,423	0.0	-56,423	0.0
9	47.7	44.3	-17,254	0.0	-50,996	0.0	-50,996	0.0	-50,996	0.0	-50,996	0.0
10	50.6	45.8	-1,968	0.0	-44,419	0.0	-44,419	0.0	-44,419	0.0	-44,419	0.0
11	53.9	47.4	0	0.0	-35,364	0.0	-35,364	0.0	-35,364	0.0	-35,364	0.0
12	57.4	49.0	0	0.0	-27,822	0.0	-27,822	0.0	-27,822	0.0	-27,822	0.0
13	60.7	50.8	0	0.0	-22,800	0.0	-22,800	0.0	-22,800	0.0	-22,800	0.0
14	63.6	52.7	0	0.0	-12,648	0.0	-12,648	0.0	-12,648	0.0	-12,648	0.0
15	65.9	53.7	0	0.0	-6,177	0.0	-6,177	0.0	-6,177	0.0	-6,177	0.0
16	67.3	54.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	3.8	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	4.6	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	3.1	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	2.2	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.1	51.9	-10,230	0.0	-8,267	0.0	-8,267	0.0	-8,267	0.0	-8,267	0.0
24	54.2	49.4	-913	0.0	-27,190	0.0	-27,190	0.0	-27,190	0.0	-27,190	0.0

April			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	-10,046	0.0	-570	0.0	-570	0.0	-570	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2	51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	53.5	50.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	53.2	51.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	53.9	51.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	55.9	52.1	0	0.0	-11,482	0.0	-17,976	0.0	-17,976	0.0	-17,976	0.0
10	58.9	53.2	0	0.0	-10,523	0.0	-10,523	0.0	-10,523	0.0	-10,523	0.0
11	62.6	55.2	0	0.0	-2,048	0.0	-2,048	0.0	-2,048	0.0	-2,048	0.0
12	66.5	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	2.0	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	5.5	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	6.5	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	7.1	0	0.0	0	0.0	0	0.0	0	0.0
17	75.6	62.0	0	7.7	0	0.0	0	0.0	0	0.0	0	0.0
18	74.9	61.7	0	7.6	0	0.0	0	0.0	0	0.0	0	0.0
19	73.7	62.0	0	6.4	0	1.1	0	1.1	0	1.1	0	1.1
20	72.1	62.4	0	5.3	0	2.0	0	2.0	0	2.0	0	2.0
21	70.2	63.3	0	4.2	0	1.5	0	1.5	0	1.5	0	1.5
22	68.0	62.5	0	3.2	0	0.8	0	0.8	0	0.8	0	0.8
23	65.7	60.5	0	2.4	0	0.3	0	0.3	0	0.3	0	0.3
24	63.4	58.5	0	1.5	-5,136	0.0	-5,136	0.0	-5,136	0.0	-5,136	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

May			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	3.2	0	1.0	0	1.0	0	1.0	0	1.0
2	65.7	61.5	0	2.5	0	0.5	0	0.5	0	0.5	0	0.5
3	63.6	59.7	0	1.8	-2,460	0.0	-2,460	0.0	-2,460	0.0	-2,460	0.0
4	61.8	58.4	0	1.2	-9,137	0.0	-9,137	0.0	-9,137	0.0	-9,137	0.0
5	60.5	57.1	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	2.3	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	4.7	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	5.7	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	6.4	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	7.1	0	0.4	0	0.4	0	0.4	0	0.4
14	81.9	65.3	0	8.0	0	3.7	0	3.7	0	3.7	0	3.7
15	84.1	66.9	0	8.9	0	4.7	0	4.7	0	4.7	0	4.7
16	84.9	67.1	0	9.6	0	5.3	0	5.3	0	5.3	0	5.3
17	84.6	67.3	0	10.1	0	5.6	0	5.6	0	5.6	0	5.6
18	83.8	67.1	0	10.1	0	5.7	0	5.7	0	5.7	0	5.7
19	82.4	67.5	0	9.2	0	5.2	0	5.2	0	5.2	0	5.2
20	80.6	68.9	0	7.9	0	4.4	0	4.4	0	4.4	0	4.4
21	78.5	71.0	0	6.7	0	3.8	0	3.8	0	3.8	0	3.8
22	76.1	69.9	0	5.7	0	3.2	0	3.2	0	3.2	0	3.2
23	73.4	68.0	0	4.8	0	2.5	0	2.5	0	2.5	0	2.5
24	70.8	65.5	0	4.0	0	1.8	0	1.8	0	1.8	0	1.8

June			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	6.3	0	2.9	0	3.5	0	3.5	0	3.5
2	72.6	68.4	0	5.1	0	2.3	0	2.5	0	2.5	0	2.5
3	70.9	67.3	0	4.3	0	1.8	0	1.9	0	1.9	0	1.9
4	69.6	66.5	0	3.8	0	1.2	0	1.3	0	1.3	0	1.3
5	68.7	65.8	0	3.4	0	0.7	0	0.7	0	0.7	0	0.7
6	68.5	65.7	0	3.1	0	0.5	0	0.5	0	0.5	0	0.5
7	69.0	66.3	0	3.8	0	0.8	0	0.8	0	0.8	0	0.8
8	70.6	66.9	0	5.1	0	1.2	0	1.2	0	1.2	0	1.2
9	73.0	67.7	0	6.5	0	1.8	0	1.8	0	1.8	0	1.8
10	76.1	68.1	0	7.7	0	3.0	0	3.0	0	3.0	0	3.0
11	79.5	69.1	0	8.7	0	3.9	0	3.9	0	3.9	0	3.9
12	82.9	70.1	0	9.5	0	4.8	0	4.8	0	4.8	0	4.8
13	86.0	71.0	0	10.0	0	5.5	0	5.5	0	5.5	0	5.5
14	88.4	72.5	0	10.9	0	7.0	0	7.0	0	7.0	0	7.0
15	90.0	74.0	0	12.0	0	8.4	0	8.4	0	8.4	0	8.4
16	90.5	73.7	0	12.7	0	8.8	0	8.8	0	8.8	0	8.8
17	90.3	74.2	0	13.1	0	9.2	0	9.2	0	9.2	0	9.2
18	89.4	73.9	0	13.1	0	9.3	0	9.3	0	9.3	0	9.3
19	88.1	74.5	0	12.8	0	8.8	0	8.8	0	8.8	0	8.8
20	86.4	75.3	0	10.5	0	7.4	0	7.4	0	7.4	0	7.4
21	84.3	76.5	0	9.5	0	7.1	0	7.1	0	7.1	0	7.1
22	81.9	75.7	0	8.8	0	6.7	0	6.7	0	6.7	0	6.7
23	79.5	74.0	0	7.6	0	5.8	0	5.8	0	5.8	0	5.8
24	77.0	72.1	0	6.7	0	4.7	0	4.7	0	4.7	0	4.7

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

July			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	6.6	0	2.3	0	2.8	0	2.8	0	2.8
2	72.4	69.4	0	5.4	0	2.0	0	2.2	0	2.2	0	2.2
3	71.3	68.4	0	4.4	0	1.6	0	1.6	0	1.6	0	1.6
4	70.5	67.7	0	3.8	0	1.0	0	1.0	0	1.0	0	1.0
5	70.0	67.4	0	3.5	0	0.7	0	0.7	0	0.7	0	0.7
6	69.9	67.5	0	3.2	0	0.4	0	0.4	0	0.4	0	0.4
7	70.3	68.0	0	4.0	0	0.6	0	0.6	0	0.6	0	0.6
8	71.7	69.0	0	5.3	0	1.3	0	1.3	0	1.3	0	1.3
9	73.7	69.5	0	6.5	0	2.2	0	2.2	0	2.2	0	2.2
10	76.2	70.6	0	7.6	0	3.6	0	3.6	0	3.6	0	3.6
11	78.9	71.8	0	8.6	0	4.3	0	4.3	0	4.3	0	4.3
12	81.4	73.0	0	9.4	0	5.2	0	5.2	0	5.2	0	5.2
13	83.4	74.4	0	9.8	0	6.0	0	6.0	0	6.0	0	6.0
14	84.8	74.8	0	10.7	0	6.7	0	6.7	0	6.7	0	6.7
15	85.2	75.0	0	11.8	0	7.6	0	7.6	0	7.6	0	7.6
16	85.1	75.0	0	12.6	0	8.2	0	8.2	0	8.2	0	8.2
17	84.6	74.7	0	13.1	0	8.0	0	8.0	0	8.0	0	8.0
18	83.8	74.6	0	13.0	0	8.3	0	8.3	0	8.3	0	8.3
19	82.7	74.6	0	12.0	0	8.0	0	8.0	0	8.0	0	8.0
20	81.4	74.4	0	10.4	0	7.0	0	7.0	0	7.0	0	7.0
21	79.9	74.9	0	9.4	0	6.4	0	6.4	0	6.4	0	6.4
22	78.4	74.0	0	8.4	0	5.7	0	5.7	0	5.7	0	5.7
23	76.8	72.7	0	7.6	0	4.6	0	4.6	0	4.6	0	4.6
24	75.2	71.6	0	6.8	0	3.8	0	3.8	0	3.8	0	3.8

August			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	6.5	0	2.8	0	3.6	0	3.6	0	3.6
2	73.2	70.3	0	5.0	0	2.4	0	2.6	0	2.6	0	2.6
3	71.7	68.9	0	4.0	0	2.0	0	2.0	0	2.0	0	2.0
4	70.4	67.8	0	3.6	0	1.3	0	1.3	0	1.3	0	1.3
5	69.5	66.8	0	3.1	0	0.8	0	0.8	0	0.8	0	0.8
6	68.9	66.4	0	2.9	0	0.4	0	0.4	0	0.4	0	0.4
7	68.7	66.4	0	3.1	0	0.3	0	0.3	0	0.3	0	0.3
8	69.2	66.8	0	4.4	0	0.7	0	0.7	0	0.7	0	0.7
9	70.8	67.7	0	6.2	0	1.4	0	1.4	0	1.4	0	1.4
10	73.2	67.7	0	7.3	0	2.3	0	2.3	0	2.3	0	2.3
11	76.2	68.8	0	8.3	0	3.1	0	3.1	0	3.1	0	3.1
12	79.3	70.3	0	8.9	0	3.9	0	3.9	0	3.9	0	3.9
13	82.3	72.2	0	9.6	0	4.8	0	4.8	0	4.8	0	4.8
14	84.7	73.7	0	10.8	0	6.0	0	6.0	0	6.0	0	6.0
15	86.3	74.6	0	11.9	0	7.2	0	7.2	0	7.2	0	7.2
16	86.8	75.1	0	12.7	0	8.1	0	8.1	0	8.1	0	8.1
17	86.6	75.1	0	12.9	0	8.5	0	8.5	0	8.5	0	8.5
18	86.0	75.3	0	12.6	0	8.9	0	8.9	0	8.9	0	8.9
19	85.1	76.0	0	11.5	0	8.2	0	8.2	0	8.2	0	8.2
20	83.8	76.8	0	10.1	0	7.6	0	7.6	0	7.6	0	7.6
21	82.3	77.2	0	9.3	0	7.2	0	7.2	0	7.2	0	7.2
22	80.6	76.3	0	8.3	0	6.5	0	6.5	0	6.5	0	6.5
23	78.7	75.3	0	7.3	0	5.4	0	5.4	0	5.4	0	5.4
24	76.8	73.7	0	6.4	0	4.5	0	4.5	0	4.5	0	4.5

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

September			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	3.5	0	1.0	0	1.2	0	1.2	0	1.2
2	67.6	65.0	0	2.6	0	0.5	0	0.6	0	0.6	0	0.6
3	65.8	63.4	0	2.0	-1,890	0.0	-1,890	0.0	-1,890	0.0	-1,890	0.0
4	64.3	62.2	0	1.6	-8,035	0.0	-8,035	0.0	-8,035	0.0	-8,035	0.0
5	63.1	61.1	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	2.0	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	3.2	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	4.3	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	5.2	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	5.9	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	6.4	0	0.0	0	0.0	0	0.0	0	0.0
14	81.2	68.4	0	7.6	0	3.4	0	3.4	0	3.4	0	3.4
15	83.0	70.0	0	8.8	0	4.0	0	4.0	0	4.0	0	4.0
16	83.7	70.5	0	9.6	0	4.7	0	4.7	0	4.7	0	4.7
17	83.4	70.5	0	10.0	0	5.4	0	5.4	0	5.4	0	5.4
18	82.8	70.9	0	9.4	0	5.6	0	5.6	0	5.6	0	5.6
19	81.6	72.7	0	8.2	0	5.0	0	5.0	0	5.0	0	5.0
20	80.1	74.7	0	7.4	0	4.9	0	4.9	0	4.9	0	4.9
21	78.3	74.1	0	6.4	0	4.6	0	4.6	0	4.6	0	4.6
22	76.3	72.4	0	5.3	0	3.9	0	3.9	0	3.9	0	3.9
23	74.1	70.7	0	4.4	0	2.8	0	2.8	0	2.8	0	2.8
24	71.8	68.9	0	3.8	0	1.8	0	1.8	0	1.8	0	1.8

October			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	-18,207	0.0	-18,207	0.0	-18,207	0.0
2	50.1	48.6	0	0.0	0	0.0	-33,483	0.0	-33,483	0.0	-33,483	0.0
3	48.4	46.9	0	0.0	0	0.0	-39,450	0.0	-39,450	0.0	-39,450	0.0
4	47.1	45.8	0	0.0	0	0.0	-44,252	0.0	-44,252	0.0	-44,252	0.0
5	46.3	44.8	0	0.0	-28,122	0.0	-49,720	0.0	-49,720	0.0	-49,720	0.0
6	46.0	44.5	-4,477	0.0	-54,430	0.0	-54,430	0.0	-54,430	0.0	-54,430	0.0
7	46.8	45.3	-39,216	0.0	-55,044	0.0	-55,044	0.0	-55,044	0.0	-55,044	0.0
8	48.9	47.5	-27,781	0.0	-49,687	0.0	-49,687	0.0	-49,687	0.0	-49,687	0.0
9	52.2	49.9	-12,275	0.0	-41,431	0.0	-41,431	0.0	-41,431	0.0	-41,431	0.0
10	56.2	52.5	0	0.0	-34,500	0.0	-34,500	0.0	-34,500	0.0	-34,500	0.0
11	60.4	54.4	0	0.0	-24,414	0.0	-24,414	0.0	-24,414	0.0	-24,414	0.0
12	64.4	56.0	0	0.0	-16,528	0.0	-16,528	0.0	-16,528	0.0	-16,528	0.0
13	67.7	57.3	0	0.0	-9,507	0.0	-9,507	0.0	-9,507	0.0	-9,507	0.0
14	69.8	58.2	0	0.0	-907	0.0	-907	0.0	-907	0.0	-907	0.0
15	70.6	58.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	1.2	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	4.8	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	3.8	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	2.9	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	1.9	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	-7,128	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.5	52.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

November			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-17,581	0.0	0	0.0	-31,923	0.0	-31,923	0.0	-31,923	0.0
2	49.4	47.3	-33,051	0.0	0	0.0	-39,297	0.0	-39,297	0.0	-39,297	0.0
3	47.2	45.3	-39,840	0.0	0	0.0	-44,460	0.0	-44,460	0.0	-44,460	0.0
4	45.3	43.4	-45,978	0.0	-37,798	0.0	-50,859	0.0	-50,859	0.0	-50,859	0.0
5	43.9	42.2	-49,188	0.0	-56,375	0.0	-56,375	0.0	-56,375	0.0	-56,375	0.0
6	43.0	41.4	-51,007	0.0	-59,857	0.0	-59,857	0.0	-59,857	0.0	-59,857	0.0
7	42.7	41.2	-51,279	0.0	-64,246	0.0	-64,246	0.0	-64,246	0.0	-64,246	0.0
8	43.5	42.0	-46,282	0.0	-64,483	0.0	-64,483	0.0	-64,483	0.0	-64,483	0.0
9	45.9	44.0	-29,972	0.0	-56,453	0.0	-56,453	0.0	-56,453	0.0	-56,453	0.0
10	49.4	46.6	-14,709	0.0	-50,290	0.0	-50,290	0.0	-50,290	0.0	-50,290	0.0
11	53.8	48.6	0	0.0	-44,057	0.0	-44,057	0.0	-44,057	0.0	-44,057	0.0
12	58.4	50.6	0	0.0	-38,361	0.0	-38,361	0.0	-38,361	0.0	-38,361	0.0
13	62.8	52.6	0	0.0	-30,998	0.0	-30,998	0.0	-30,998	0.0	-30,998	0.0
14	66.3	54.5	0	0.0	-18,307	0.0	-18,307	0.0	-18,307	0.0	-18,307	0.0
15	68.7	55.7	0	0.0	-7,378	0.0	-7,378	0.0	-7,378	0.0	-7,378	0.0
16	69.5	56.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	1.5	-890	0.0	-890	0.0	-890	0.0	-890	0.0
20	65.0	59.4	0	0.6	-5,485	0.0	-5,485	0.0	-5,485	0.0	-5,485	0.0
21	62.8	58.2	-3,209	0.0	-9,719	0.0	-9,719	0.0	-9,719	0.0	-9,719	0.0
22	60.2	56.1	0	0.0	-15,803	0.0	-15,803	0.0	-15,803	0.0	-15,803	0.0
23	57.5	54.0	0	0.0	-20,927	0.0	-20,927	0.0	-20,927	0.0	-20,927	0.0
24	54.7	51.7	0	0.0	-26,987	0.0	-26,987	0.0	-26,987	0.0	-26,987	0.0

December			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-45,027	0.0	-57,545	0.0	-57,545	0.0	-57,545	0.0	-57,545	0.0
2	43.2	41.1	-51,463	0.0	-62,666	0.0	-62,666	0.0	-62,666	0.0	-62,666	0.0
3	41.8	39.8	-57,666	0.0	-67,699	0.0	-67,699	0.0	-67,699	0.0	-67,699	0.0
4	40.7	38.7	-61,450	0.0	-70,983	0.0	-70,983	0.0	-70,983	0.0	-70,983	0.0
5	40.1	38.4	-64,617	0.0	-73,869	0.0	-73,869	0.0	-73,869	0.0	-73,869	0.0
6	39.9	38.4	-66,315	0.0	-76,485	0.0	-76,485	0.0	-76,485	0.0	-76,485	0.0
7	40.5	39.0	-66,820	0.0	-79,181	0.0	-79,181	0.0	-79,181	0.0	-79,181	0.0
8	42.2	40.7	-65,967	0.0	-79,371	0.0	-79,371	0.0	-79,371	0.0	-79,371	0.0
9	44.9	43.4	-52,390	0.0	-71,341	0.0	-71,341	0.0	-71,341	0.0	-71,341	0.0
10	48.2	45.8	-37,955	0.0	-64,906	0.0	-64,906	0.0	-64,906	0.0	-64,906	0.0
11	51.7	48.3	-26,761	0.0	-57,962	0.0	-57,962	0.0	-57,962	0.0	-57,962	0.0
12	55.0	50.7	-18,297	0.0	-50,546	0.0	-50,546	0.0	-50,546	0.0	-50,546	0.0
13	57.7	52.0	-11,621	0.0	-47,042	0.0	-47,042	0.0	-47,042	0.0	-47,042	0.0
14	59.5	52.6	-2,421	0.0	-39,391	0.0	-39,391	0.0	-39,391	0.0	-39,391	0.0
15	60.1	52.7	0	0.0	-32,279	0.0	-32,279	0.0	-32,279	0.0	-32,279	0.0
16	59.9	52.6	0	0.0	-25,752	0.0	-25,752	0.0	-25,752	0.0	-25,752	0.0
17	59.2	52.1	0	0.0	-24,488	0.0	-24,488	0.0	-24,488	0.0	-24,488	0.0
18	58.2	51.8	0	0.0	-25,534	0.0	-25,534	0.0	-25,534	0.0	-25,534	0.0
19	56.8	52.2	0	0.0	-27,207	0.0	-27,207	0.0	-27,207	0.0	-27,207	0.0
20	55.0	51.4	0	0.0	-31,070	0.0	-31,070	0.0	-31,070	0.0	-31,070	0.0
21	53.1	50.1	0	0.0	-36,017	0.0	-36,017	0.0	-36,017	0.0	-36,017	0.0
22	51.0	48.1	-12,406	0.0	-40,195	0.0	-40,195	0.0	-40,195	0.0	-40,195	0.0
23	48.9	46.2	-33,842	0.0	-45,790	0.0	-45,790	0.0	-45,790	0.0	-45,790	0.0
24	46.9	44.1	-39,850	0.0	-52,149	0.0	-52,149	0.0	-52,149	0.0	-52,149	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 25410 (6 BUILDINGS)

-----CARD 08-- Climatic Information ---

Weather Code	Summer Clearness Number	Winter Clearness Number	Summer Design Dry Bulb	Summer Design Wet Bulb	Winter Design Dry Bulb	Building Orientation	Summer Ground Reflect	Winter Ground Reflect
AUGUSTA						90		

-----CARD 09-- Load Simulation Periods--

1st Month Cooling Simulation	Last Month Cooling Simulation	Peak Cooling Load Hr	1st Month Summer Period	Last Month Summer Period	1st Month Daylight Savings	Last Month Daylight Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters--------------------------

Cooling Load Method	Heating Load Method	Ventilation Method	Airflow Input Units	Airflow Output Units	Room Circulation Rate	Put Wall RA Load to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

-------------------- Load Section Alternative #1 --------------------

---- Load Alternative ----

Number	Description
1	BACHELOR ENLISTED QUARTERS

-----CARD 20-- General Room Parameters --

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
1	1	ALL THREE FLOORS	3695		2	0		10	3		

----- CARD 21-- Thermostat Parameters --

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

----- CARD 22-- Roof Parameters --

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				199			

----- CARD 24-- Wall Parameters --

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	102.25	9.5		200	0			
1	2	46.25	9.5		200	90			
1	3	102.25	9.5		200	180			
1	4	46.25	9.5		200	270			

----- CARD 25-- Wall/Glass Parameters --

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	2	4	13	1.03	.87					
1	3	2	4	13	1.03	.87					

----- CARD 26-- Schedules --

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

----- CARD 27-- People and Lights ---

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	Daylighting Reference Point 1	Reference Point 2
1	16	PEOPLE	255	325	1.3	WATT-SF	INCAND				

-----CARD 28--- Miscellaneous Equipment --

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	WASHERS	96	WATTS	FGHEAT						
1	2	DRYER	5.2	KW	FGHEAT						
1	3	REFRIG	1.6	KW	FGHEAT						
1	4	MICROWAVE	400	WATTS	FGHEAT						
1	5	COFFEE POT	1000	BTUH	FGHEAT						
1	6	TELEVISION	.3	KW	FGHEAT						

-----CARD 29--- Room Airflows --

Room Number	Ventilation Cooling Value	Ventilation Cooling Units	Ventilation Heating Value	Ventilation Heating Units	Infiltration Cooling Value	Infiltration Cooling Units	Infiltration Heating Value	Infiltration Heating Units	Reheat Minimum Value	Reheat Minimum Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows --

Room Number	Main Cooling Value	Main Cooling Units	Main Heating Value	Main Heating Units	Auxiliary Cooling Value	Auxiliary Cooling Units	Auxiliary Heating Value	Auxiliary Heating Units	Room Exhaust Value	Room Exhaust Units
1	1	CFM-SF	1	CFM-SF						

---------------------- System Section Alternative #1 ----------------------

-----CARD 39-- System Alternative -----

Number	Description
1	FAN COILS SYSTEM

-----CARD 40--- System Type --

------------OPTIONAL VENTILATION SYSTEM------------

System Set Number	System Type	Ventil Deck Location	Cooling SADBVh	Heating SADBVh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	FC						

-----CARD 41-- Zone Assignment --

System Set Number	Ref #1 Begin	Ref #1 End	Ref #2 Begin	Ref #2 End	Ref #3 Begin	Ref #3 End	Ref #4 Begin	Ref #4 End	Ref #5 Begin	Ref #5 End	Ref #6 Begin	Ref #6 End
1	1	1										

```
-----CARD 42--- Fan SP and Duct Parameters-------------------------------------------------
System  Cool  Heat  Return  Mn Exh  Aux   Rm Exh  Cool      Return    Supply  Supply  Return
Set     Fan   Fan   Fan     Fan     Fan   Fan     Fan Mtr   Fan Mtr   Duct    Duct    Air
Number  SP    SP    SP      SP      SP    SP      Loc       Loc       Ht Gn   Loc     Path
1
```

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-----CARD 48-- Cooling Capacity Overrides ------------------------------------------------------
System                      Misc    -------------MAIN  COOLING------------  ---AUX COOLING----
Set     People    Lights    Loads   Capacity  Capacity  Capacity  Capacity  Capacity  Capacity
Number  Variance  Variance  Variance Value    Units     Sizing    Location  Value     Units
1                           75
```

Utility Description Reference Table

    Schedules:
        CLGCONST SAMPLE COOLING TSTAT SCHEDULE
        FGHEAT   SCHD FOR HEAT LOAD CALCS
        HTGCONST SAMPLE HEATING TSTAT SCHEDULE
        YES AVAILABLE (100%)
    System:
        FC   (Utility file not found)

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Util Percent
----   ------------
  0   0
 24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Util Percent
----   ------------
  0   0
 24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour	Util Percent
0	100
24	

```
*********************************************************************************
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**                                                                           **
**              T R A C E   6 0 0   A N A L Y S I S                           **
**                                                                           **
**              by              **                                           **
**                                                                           **
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ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 25412 (15 BUILDINGS)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April   To October
System Simulation Period: January   To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 19:24:54   8/16/94
Dataset Name: FGTYPS36 .TM

System   1   Block   FC   - FAN COIL

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*********************** COOLING COIL PEAK *************************** CLG SPACE PEAK ************ HEATING COIL PEAK ********
Peaked at Time ==)            Mo/Hr: 7/17                   *      Mo/Hr: 6/18    *        Mo/Hr: 13/ 1
Outside Air ==)        OADB/WB/HR: 94/ 75/105.0             *      OADB: 96       *        OADB: 23
                                                           *                     *
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	Space Sens.+Lat. (Btuh)	Ret. Air Sensible (Btuh)	Ret. Air Latent (Btuh)	Net Total (Btuh)	Percnt Of Tot (%)	*	Space Sensible (Btuh)	Percnt Of Tot (%)	*	Space Peak Space Sens (Btuh)	Coil Peak Tot Sens (Btuh)	Percnt Of Tot (%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	32,752	0		32,752	9.71	*	36,473	13.00	*	-23,582	-23,582	7.04
Glass Solar	133,152	0		133,152	39.46	*	138,624	49.40	*	0	0	0.00
Glass Cond	33,253	0		33,253	9.86	*	38,702	13.79	*	-92,433	-92,433	27.58
Wall Cond	39,280	0		39,280	11.64	*	44,930	16.01	*	-60,534	-60,534	18.07
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	40,089			40,089	11.88	*	21,914	7.81	*	-88,892	-88,892	26.53
Sub Total==)	278,527	0		278,527	82.55	*	280,642	100.00	*	-265,441	-265,441	79.22
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	58,892	17.45	*	0	0.00	*	0	-69,644	20.78
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==)	278,527	0	0	337,419	100.00	*	280,642	100.00	*	-265,441	-335,085	100.00

-------------------------------COOLING COIL SELECTION----------------------------------   --------------AREAS--------------

	Total Capacity (Tons)	(Mbh)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR Deg F	Deg F	Grains	Leaving DB/WB/HR Deg F	Deg F	Grains		Gross Total	Glass (sf)	(%)
Main Clg	28.1	337.4	286.6	22,365	76.2	65.1	75.6	63.7	60.4	73.9	Floor	22,365		
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0		
Totals	28.1	337.4									Roof	7,455	0	0
											Wall	11,870	1,824	15

-----------HEATING COIL SELECTION-------------   --------AIRFLOWS (cfm)--------   --ENGINEERING CHECKS--   --TEMPERATURES (F)---

	Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating					
Main Htg	-335.1	22,365	65.2	78.7	Vent	1,395	1,395	Clg % OA	6.2	Type	Clg	Htg
Aux Htg	0.0	0	0.0	0.0	Infil	950	1,781	Clg Cfm/Sqft	1.00	SADB	63.7	78.7
Preheat	-0.0	22,365	65.2	63.7	Supply	22,365	22,365	Clg Cfm/Ton	795.39	Plenum	75.0	68.0
Reheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Sqft/Ton	795.39	Return	75.0	68.0
Humidif	0.0	0	0.0	0.0	Return	22,365	22,365	Clg Btuh/Sqft	15.09	Ret/OA	76.2	65.2
Opt Vent	0.0	0	0.0	0.0	Exhaust	1,395	1,395	No. People	93	Runarnd	75.0	68.0
Total	-335.1				Rm Exh	0	0	Htg % OA	6.2	Fn MtrTD	0.0	0.0
					Auxil	0	0	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
								Htg Btuh/SqFt	-14.98	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

January			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-286,619	0.0	-179,964	0.0	-179,964	0.0	-179,964	0.0	-179,964	0.0
2	32.9	30.7	-263,006	0.0	-183,717	0.0	-183,717	0.0	-183,717	0.0	-183,717	0.0
3	33.1	31.3	-245,958	0.0	-189,757	0.0	-189,757	0.0	-189,757	0.0	-189,757	0.0
4	33.9	32.1	-233,718	0.0	-186,220	0.0	-186,220	0.0	-186,220	0.0	-186,220	0.0
5	35.2	33.5	-225,065	0.0	-191,411	0.0	-191,411	0.0	-191,411	0.0	-191,411	0.0
6	37.0	35.4	-217,680	0.0	-189,770	0.0	-189,770	0.0	-189,770	0.0	-189,770	0.0
7	39.0	37.6	-205,113	0.0	-186,175	0.0	-186,175	0.0	-186,175	0.0	-186,175	0.0
8	41.3	40.1	-182,483	0.0	-179,080	0.0	-179,080	0.0	-179,080	0.0	-179,080	0.0
9	43.7	42.5	-140,900	0.0	-157,085	0.0	-157,085	0.0	-157,085	0.0	-157,085	0.0
10	46.1	44.0	-101,450	0.0	-142,057	0.0	-142,057	0.0	-142,057	0.0	-142,057	0.0
11	48.4	45.0	-69,849	0.0	-126,575	0.0	-126,575	0.0	-126,575	0.0	-126,575	0.0
12	50.5	45.6	-51,825	0.0	-120,044	0.0	-120,044	0.0	-120,044	0.0	-120,044	0.0
13	52.2	46.1	-42,147	0.0	-111,358	0.0	-111,358	0.0	-111,358	0.0	-111,358	0.0
14	53.5	46.4	-21,716	0.0	-101,122	0.0	-101,122	0.0	-101,122	0.0	-101,122	0.0
15	54.3	46.3	0	0.0	-85,407	0.0	-85,407	0.0	-85,407	0.0	-85,407	0.0
16	54.6	46.1	0	0.0	-70,929	0.0	-70,929	0.0	-70,929	0.0	-70,929	0.0
17	54.0	45.9	0	0.0	-64,788	0.0	-64,788	0.0	-64,788	0.0	-64,788	0.0
18	52.5	45.0	0	0.0	-74,091	0.0	-74,091	0.0	-74,091	0.0	-74,091	0.0
19	50.1	44.8	0	0.0	-85,134	0.0	-85,134	0.0	-85,134	0.0	-85,134	0.0
20	47.1	43.3	-44,550	0.0	-98,047	0.0	-98,047	0.0	-98,047	0.0	-98,047	0.0
21	43.7	40.4	-77,558	0.0	-116,688	0.0	-116,688	0.0	-116,688	0.0	-116,688	0.0
22	40.4	37.3	-96,945	0.0	-137,171	0.0	-137,171	0.0	-137,171	0.0	-137,171	0.0
23	37.3	34.9	-113,286	0.0	-148,730	0.0	-148,730	0.0	-148,730	0.0	-148,730	0.0
24	34.9	32.6	-130,477	0.0	-165,434	0.0	-165,434	0.0	-165,434	0.0	-165,434	0.0

February			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-127,923	0.0	-139,494	0.0	-139,494	0.0	-139,494	0.0	-139,494	0.0
2	39.7	37.1	-140,570	0.0	-152,692	0.0	-152,692	0.0	-152,692	0.0	-152,692	0.0
3	37.8	35.1	-154,516	0.0	-163,839	0.0	-163,839	0.0	-163,839	0.0	-163,839	0.0
4	36.3	33.8	-163,966	0.0	-170,036	0.0	-170,036	0.0	-170,036	0.0	-170,036	0.0
5	35.1	32.6	-171,021	0.0	-184,628	0.0	-184,628	0.0	-184,628	0.0	-184,628	0.0
6	34.4	32.0	-176,107	0.0	-188,927	0.0	-188,927	0.0	-188,927	0.0	-188,927	0.0
7	34.1	31.9	-178,246	0.0	-195,641	0.0	-195,641	0.0	-195,641	0.0	-195,641	0.0
8	34.6	32.4	-164,190	0.0	-190,090	0.0	-190,090	0.0	-190,090	0.0	-190,090	0.0
9	36.0	33.8	-116,663	0.0	-170,137	0.0	-170,137	0.0	-170,137	0.0	-170,137	0.0
10	38.2	34.7	-78,560	0.0	-158,120	0.0	-158,120	0.0	-158,120	0.0	-158,120	0.0
11	40.9	36.2	-49,245	0.0	-148,092	0.0	-148,092	0.0	-148,092	0.0	-148,092	0.0
12	43.9	37.4	-33,123	0.0	-140,011	0.0	-140,011	0.0	-140,011	0.0	-140,011	0.0
13	46.9	39.4	-25,891	0.0	-130,000	0.0	-130,000	0.0	-130,000	0.0	-130,000	0.0
14	49.7	41.4	-10,374	0.0	-114,479	0.0	-114,479	0.0	-114,479	0.0	-114,479	0.0
15	51.8	42.8	0	0.0	-92,511	0.0	-92,511	0.0	-92,511	0.0	-92,511	0.0
16	53.2	43.9	0	0.0	-79,525	0.0	-79,525	0.0	-79,525	0.0	-79,525	0.0
17	53.7	44.2	0	0.0	-63,456	0.0	-63,456	0.0	-63,456	0.0	-63,456	0.0
18	53.4	44.4	0	0.0	-57,444	0.0	-57,444	0.0	-57,444	0.0	-57,444	0.0
19	52.7	44.4	0	0.0	-71,214	0.0	-71,214	0.0	-71,214	0.0	-71,214	0.0
20	51.5	45.2	0	0.0	-81,702	0.0	-81,702	0.0	-81,702	0.0	-81,702	0.0
21	50.0	44.6	0	0.0	-91,010	0.0	-91,010	0.0	-91,010	0.0	-91,010	0.0
22	48.1	43.3	-40,505	0.0	-104,721	0.0	-104,721	0.0	-104,721	0.0	-104,721	0.0
23	46.1	41.8	-95,723	0.0	-116,240	0.0	-116,240	0.0	-116,240	0.0	-116,240	0.0
24	43.9	40.1	-111,197	0.0	-127,366	0.0	-127,366	0.0	-127,366	0.0	-127,366	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

March			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-41,221	0.0	0	0.0	-69,452	0.0	-69,452	0.0	-69,452	0.0
2	48.7	44.6	-58,996	0.0	0	0.0	-87,432	0.0	-87,432	0.0	-87,432	0.0
3	46.6	42.9	-71,145	0.0	0	0.0	-99,918	0.0	-99,918	0.0	-99,918	0.0
4	44.9	41.4	-84,974	0.0	-66,971	0.0	-112,982	0.0	-112,982	0.0	-112,982	0.0
5	43.9	40.8	-92,920	0.0	-120,230	0.0	-120,230	0.0	-120,230	0.0	-120,230	0.0
6	43.5	40.8	-97,955	0.0	-127,376	0.0	-127,376	0.0	-127,376	0.0	-127,376	0.0
7	44.0	41.4	-100,160	0.0	-129,344	0.0	-129,344	0.0	-129,344	0.0	-129,344	0.0
8	45.4	42.7	-59,981	0.0	-111,538	0.0	-111,538	0.0	-111,538	0.0	-111,538	0.0
9	47.7	44.3	-13,744	0.0	-91,322	0.0	-91,322	0.0	-91,322	0.0	-91,322	0.0
10	50.6	45.8	0	0.0	-71,246	0.0	-71,246	0.0	-71,246	0.0	-71,246	0.0
11	53.9	47.4	0	0.0	-46,571	0.0	-46,571	0.0	-46,571	0.0	-46,571	0.0
12	57.4	49.0	0	0.0	-32,722	0.0	-32,722	0.0	-32,722	0.0	-32,722	0.0
13	60.7	50.8	0	0.0	-25,597	0.0	-25,597	0.0	-25,597	0.0	-25,597	0.0
14	63.6	52.7	0	0.0	-4,879	0.0	-4,879	0.0	-4,879	0.0	-4,879	0.0
15	65.9	53.7	0	1.9	0	0.0	0	0.0	0	0.0	0	0.0
16	67.3	54.4	0	11.1	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	12.3	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	11.7	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	7.7	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	5.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	2.2	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	-718	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.1	51.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.2	49.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

April			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2	51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	53.5	50.9	-13,831	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	53.2	51.1	-9,911	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	53.9	51.5	0	0.0	-11,531	0.0	-10,512	0.0	-10,512	0.0	-10,512	0.0
9	55.9	52.1	0	0.0	-33,156	0.0	-33,156	0.0	-33,156	0.0	-33,156	0.0
10	58.9	53.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	62.6	55.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	66.5	57.3	0	3.5	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	11.5	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	13.2	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	15.3	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	17.1	0	0.0	0	0.0	0	0.0	0	0.0
17	75.6	62.0	0	18.3	0	1.6	0	1.6	0	1.6	0	1.6
18	74.9	61.7	0	17.9	0	8.2	0	8.2	0	8.2	0	8.2
19	73.7	62.0	0	14.7	0	6.8	0	6.8	0	6.8	0	6.8
20	72.1	62.4	0	11.4	0	5.0	0	5.0	0	5.0	0	5.0
21	70.2	63.3	0	8.8	0	3.6	0	3.6	0	3.6	0	3.6
22	68.0	62.5	0	6.2	0	2.0	0	2.0	0	2.0	0	2.0
23	65.7	60.5	0	4.3	0	0.5	0	0.5	0	0.5	0	0.5
24	63.4	58.5	0	2.4	-12,406	0.0	-12,406	0.0	-12,406	0.0	-12,406	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

May Hour	OADB	OAWB	Design Htg Btuh	Design Clg Ton	Weekday Htg Btuh	Weekday Clg Ton	Saturday Htg Btuh	Saturday Clg Ton	Sunday Htg Btuh	Sunday Clg Ton	Monday Htg Btuh	Monday Clg Ton
1	68.2	63.5	0	5.8	0	1.8	0	1.9	0	1.9	0	1.9
2	65.7	61.5	0	4.2	0	0.4	0	0.4	0	0.4	0	0.4
3	63.6	59.7	0	3.2	-10,795	0.0	-10,795	0.0	-10,795	0.0	-10,795	0.0
4	61.8	58.4	0	2.0	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	2.9	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	6.0	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	8.9	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	11.6	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	13.7	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	14.7	0	0.6	0	0.6	0	0.6	0	0.6
13	78.5	63.7	0	15.8	0	6.9	0	6.9	0	6.9	0	6.9
14	81.9	65.3	0	17.4	0	8.8	0	8.8	0	8.8	0	8.8
15	84.1	66.9	0	19.6	0	11.2	0	11.2	0	11.2	0	11.2
16	84.9	67.1	0	21.4	0	12.3	0	12.3	0	12.3	0	12.3
17	84.6	67.3	0	22.6	0	13.1	0	13.1	0	13.1	0	13.1
18	83.8	67.1	0	22.5	0	13.2	0	13.2	0	13.2	0	13.2
19	82.4	67.5	0	20.0	0	12.1	0	12.1	0	12.1	0	12.1
20	80.6	68.9	0	16.5	0	9.9	0	9.9	0	9.9	0	9.9
21	78.5	71.0	0	13.8	0	8.0	0	8.0	0	8.0	0	8.0
22	76.1	69.9	0	11.2	0	6.4	0	6.4	0	6.4	0	6.4
23	73.4	68.0	0	9.3	0	4.9	0	4.9	0	4.9	0	4.9
24	70.8	65.5	0	7.4	0	3.5	0	3.5	0	3.5	0	3.5

June Hour	OADB	OAWB	Design Htg Btuh	Design Clg Ton	Weekday Htg Btuh	Weekday Clg Ton	Saturday Htg Btuh	Saturday Clg Ton	Sunday Htg Btuh	Sunday Clg Ton	Monday Htg Btuh	Monday Clg Ton
1	74.7	70.1	0	10.9	0	5.4	0	6.5	0	6.5	0	6.5
2	72.6	68.4	0	9.1	0	4.0	0	4.5	0	4.5	0	4.5
3	70.9	67.3	0	7.7	0	2.8	0	2.9	0	2.9	0	2.9
4	69.6	66.5	0	6.6	0	2.0	0	2.0	0	2.0	0	2.0
5	68.7	65.8	0	5.8	0	0.9	0	1.0	0	1.0	0	1.0
6	68.5	65.7	0	5.3	0	0.4	0	0.4	0	0.4	0	0.4
7	69.0	66.3	0	7.6	0	1.4	0	1.4	0	1.4	0	1.4
8	70.6	66.9	0	11.2	0	3.1	0	3.1	0	3.1	0	3.1
9	73.0	67.7	0	14.9	0	4.7	0	4.7	0	4.7	0	4.7
10	76.1	68.1	0	17.4	0	7.8	0	8.0	0	8.0	0	8.0
11	79.5	69.1	0	19.4	0	9.9	0	10.1	0	10.1	0	10.1
12	82.9	70.1	0	20.6	0	11.2	0	11.2	0	11.2	0	11.2
13	86.0	71.0	0	21.2	0	12.4	0	12.4	0	12.4	0	12.4
14	88.4	72.5	0	22.9	0	14.9	0	14.9	0	14.9	0	14.9
15	90.0	74.0	0	25.4	0	18.1	0	18.1	0	18.1	0	18.1
16	90.5	73.7	0	27.3	0	18.9	0	18.9	0	18.9	0	18.9
17	90.3	74.2	0	28.1	0	19.4	0	19.4	0	19.4	0	19.4
18	89.4	73.9	0	28.1	0	19.7	0	19.7	0	19.7	0	19.7
19	88.1	74.5	0	25.9	0	18.2	0	18.2	0	18.2	0	18.2
20	86.4	75.3	0	21.1	0	15.1	0	15.1	0	15.1	0	15.1
21	84.3	76.5	0	18.5	0	13.9	0	13.9	0	13.9	0	13.9
22	81.9	75.7	0	16.5	0	12.8	0	12.8	0	12.8	0	12.8
23	79.5	74.0	0	14.0	0	10.9	0	10.9	0	10.9	0	10.9
24	77.0	72.1	0	12.1	0	8.4	0	8.4	0	8.4	0	8.4

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

July			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	12.0	0	4.1	0	5.0	0	5.0	0	5.0
2	72.4	69.4	0	9.6	0	3.4	0	3.9	0	3.9	0	3.9
3	71.3	68.4	0	7.8	0	2.6	0	2.7	0	2.7	0	2.7
4	70.5	67.7	0	6.8	0	1.5	0	1.5	0	1.5	0	1.5
5	70.0	67.4	0	6.1	0	0.8	0	0.8	0	0.8	0	0.8
6	69.9	67.5	0	5.6	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	7.8	0	1.3	0	1.3	0	1.3	0	1.3
8	71.7	69.0	0	11.4	0	3.3	0	3.3	0	3.3	0	3.3
9	73.7	69.5	0	15.0	0	5.8	0	5.8	0	5.8	0	5.8
10	76.2	70.6	0	17.3	0	8.9	0	8.9	0	8.9	0	8.9
11	78.9	71.8	0	19.0	0	10.6	0	10.6	0	10.6	0	10.6
12	81.4	73.0	0	20.1	0	12.1	0	12.1	0	12.1	0	12.1
13	83.4	74.4	0	20.8	0	12.8	0	12.8	0	12.8	0	12.8
14	84.8	74.8	0	22.1	0	14.5	0	14.5	0	14.5	0	14.5
15	85.2	75.0	0	24.8	0	16.6	0	16.6	0	16.6	0	16.6
16	85.1	75.0	0	26.4	0	17.3	0	17.3	0	17.3	0	17.3
17	84.6	74.7	0	27.9	0	17.2	0	17.2	0	17.2	0	17.2
18	83.8	74.6	0	27.2	0	17.9	0	17.9	0	17.9	0	17.9
19	82.7	74.6	0	24.9	0	16.2	0	16.2	0	16.2	0	16.2
20	81.4	74.4	0	20.9	0	13.9	0	13.9	0	13.9	0	13.9
21	79.9	74.9	0	18.5	0	12.3	0	12.3	0	12.3	0	12.3
22	78.4	74.0	0	16.0	0	10.8	0	10.8	0	10.8	0	10.8
23	76.8	72.7	0	14.2	0	8.6	0	8.6	0	8.6	0	8.6
24	75.2	71.6	0	12.2	0	7.0	0	7.0	0	7.0	0	7.0

August			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	11.7	0	4.7	0	6.2	0	6.2	0	6.2
2	73.2	70.3	0	8.9	0	4.1	0	4.5	0	4.5	0	4.5
3	71.7	68.9	0	7.5	0	2.9	0	3.0	0	3.0	0	3.0
4	70.4	67.8	0	6.1	0	1.9	0	1.9	0	1.9	0	1.9
5	69.5	66.8	0	5.4	0	1.0	0	1.1	0	1.1	0	1.1
6	68.9	66.4	0	4.9	0	0.4	0	0.4	0	0.4	0	0.4
7	68.7	66.4	0	6.0	0	0.5	0	0.5	0	0.5	0	0.5
8	69.2	66.8	0	9.9	0	2.0	0	2.0	0	2.0	0	2.0
9	70.8	67.7	0	13.8	0	3.9	0	3.9	0	3.9	0	3.9
10	73.2	67.7	0	16.9	0	6.5	0	6.5	0	6.5	0	6.5
11	76.2	68.8	0	18.2	0	8.2	0	8.2	0	8.2	0	8.2
12	79.3	70.3	0	19.4	0	9.4	0	9.4	0	9.4	0	9.4
13	82.3	72.2	0	20.2	0	10.6	0	10.6	0	10.6	0	10.6
14	84.7	73.7	0	22.5	0	12.9	0	12.9	0	12.9	0	12.9
15	86.3	74.6	0	24.8	0	16.1	0	16.1	0	16.1	0	16.1
16	86.8	75.1	0	26.9	0	17.4	0	17.4	0	17.4	0	17.4
17	86.6	75.1	0	27.6	0	18.4	0	18.4	0	18.4	0	18.4
18	86.0	75.3	0	26.9	0	19.0	0	19.0	0	19.0	0	19.0
19	85.1	76.0	0	23.7	0	16.7	0	16.7	0	16.7	0	16.7
20	83.8	76.8	0	20.3	0	14.6	0	14.6	0	14.6	0	14.6
21	82.3	77.2	0	18.0	0	13.8	0	13.8	0	13.8	0	13.8
22	80.6	76.3	0	15.6	0	12.2	0	12.2	0	12.2	0	12.2
23	78.7	75.3	0	13.2	0	10.2	0	10.2	0	10.2	0	10.2
24	76.8	73.7	0	11.7	0	8.3	0	8.3	0	8.3	0	8.3

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

| September | | | ------ Design ----- | | ----- Weekday ----- | | ----- Saturday---- | | ------ Sunday ----- | | ------ Monday ----- | |
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	6.3	0	1.6	0	1.9	0	1.9	0	1.9
2	67.6	65.0	0	4.5	0	0.3	0	0.5	0	0.5	0	0.5
3	65.8	63.4	0	3.5	-7,946	0.0	-7,946	0.0	-7,946	0.0	-7,946	0.0
4	64.3	62.2	0	2.4	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	4.7	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	7.8	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	10.6	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	12.5	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	13.4	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	14.5	0	5.4	0	5.4	0	5.4	0	5.4
14	81.2	68.4	0	16.6	0	8.2	0	8.2	0	8.2	0	8.2
15	83.0	70.0	0	19.2	0	9.7	0	9.7	0	9.7	0	9.7
16	83.7	70.5	0	21.2	0	11.1	0	11.2	0	11.2	0	11.2
17	83.4	70.5	0	21.9	0	12.7	0	12.7	0	12.7	0	12.7
18	82.8	70.9	0	20.2	0	12.5	0	12.5	0	12.5	0	12.5
19	81.6	72.7	0	16.5	0	10.3	0	10.3	0	10.3	0	10.3
20	80.1	74.7	0	14.5	0	9.7	0	9.7	0	9.7	0	9.7
21	78.3	74.1	0	12.3	0	9.0	0	9.0	0	9.0	0	9.0
22	76.3	72.4	0	10.0	0	7.1	0	7.1	0	7.1	0	7.1
23	74.1	70.7	0	8.4	0	5.2	0	5.2	0	5.2	0	5.2
24	71.8	68.9	0	6.8	0	3.2	0	3.2	0	3.2	0	3.2

| October | | | ------ Design ----- | | ----- Weekday ----- | | ----- Saturday---- | | ------ Sunday ----- | | ------ Monday ----- | |
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	50.1	48.6	0	0.0	0	0.0	-56,096	0.0	-56,096	0.0	-56,096	0.0
3	48.4	46.9	0	0.0	0	0.0	-83,813	0.0	-83,813	0.0	-83,813	0.0
4	47.1	45.8	0	0.0	0	0.0	-93,716	0.0	-93,716	0.0	-93,716	0.0
5	46.3	44.8	0	0.0	-104,292	0.0	-104,706	0.0	-104,706	0.0	-104,706	0.0
6	46.0	44.5	-50,047	0.0	-114,426	0.0	-114,426	0.0	-114,426	0.0	-114,426	0.0
7	46.8	45.3	-86,059	0.0	-115,649	0.0	-115,649	0.0	-115,649	0.0	-115,649	0.0
8	48.9	47.5	-50,878	0.0	-96,347	0.0	-96,347	0.0	-96,347	0.0	-96,347	0.0
9	52.2	49.9	-7,073	0.0	-71,151	0.0	-71,151	0.0	-71,151	0.0	-71,151	0.0
10	56.2	52.5	0	0.0	-51,003	0.0	-51,003	0.0	-51,003	0.0	-51,003	0.0
11	60.4	54.4	0	0.0	-29,664	0.0	-29,664	0.0	-29,664	0.0	-29,664	0.0
12	64.4	56.0	0	0.0	-15,300	0.0	-15,300	0.0	-15,300	0.0	-15,300	0.0
13	67.7	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	4.1	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	11.9	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	12.3	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	9.2	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	6.3	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	3.8	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	-934	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.5	52.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

November			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	0	0.0	0	0.0	-68,927	0.0	-68,927	0.0	-68,927	0.0
2	49.4	47.3	-63,858	0.0	0	0.0	-83,805	0.0	-83,805	0.0	-83,805	0.0
3	47.2	45.3	-89,736	0.0	-9,378	0.0	-97,544	0.0	-97,544	0.0	-97,544	0.0
4	45.3	43.4	-99,056	0.0	-107,099	0.0	-107,099	0.0	-107,099	0.0	-107,099	0.0
5	43.9	42.2	-109,003	0.0	-118,009	0.0	-118,009	0.0	-118,009	0.0	-118,009	0.0
6	43.0	41.4	-109,601	0.0	-125,024	0.0	-125,024	0.0	-125,024	0.0	-125,024	0.0
7	42.7	41.2	-110,226	0.0	-130,433	0.0	-130,433	0.0	-130,433	0.0	-130,433	0.0
8	43.5	42.0	-94,172	0.0	-129,287	0.0	-129,287	0.0	-129,287	0.0	-129,287	0.0
9	45.9	44.0	-48,489	0.0	-107,497	0.0	-107,497	0.0	-107,497	0.0	-107,497	0.0
10	49.4	46.6	-8,599	0.0	-88,490	0.0	-88,490	0.0	-88,490	0.0	-88,490	0.0
11	53.8	48.6	0	0.0	-75,435	0.0	-75,435	0.0	-75,435	0.0	-75,435	0.0
12	58.4	50.6	0	0.0	-62,389	0.0	-62,389	0.0	-62,389	0.0	-62,389	0.0
13	62.8	52.6	0	0.0	-46,093	0.0	-46,093	0.0	-46,093	0.0	-46,093	0.0
14	66.3	54.5	0	0.0	-23,031	0.0	-23,031	0.0	-23,031	0.0	-23,031	0.0
15	68.7	55.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	8.8	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	5.9	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8	58.2	-10,171	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2	56.1	0	0.0	-3,417	0.0	-3,417	0.0	-3,417	0.0	-3,417	0.0
23	57.5	54.0	0	0.0	-42,919	0.0	-42,919	0.0	-42,919	0.0	-42,919	0.0
24	54.7	51.7	0	0.0	-55,537	0.0	-55,537	0.0	-55,537	0.0	-55,537	0.0

December			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-98,805	0.0	-119,340	0.0	-119,340	0.0	-119,340	0.0	-119,340	0.0
2	43.2	41.1	-112,140	0.0	-129,871	0.0	-129,871	0.0	-129,871	0.0	-129,871	0.0
3	41.8	39.8	-121,650	0.0	-139,853	0.0	-139,853	0.0	-139,853	0.0	-139,853	0.0
4	40.7	38.7	-129,585	0.0	-146,479	0.0	-146,479	0.0	-146,479	0.0	-146,479	0.0
5	40.1	38.4	-136,181	0.0	-152,287	0.0	-152,287	0.0	-152,287	0.0	-152,287	0.0
6	39.9	38.4	-139,727	0.0	-157,545	0.0	-157,545	0.0	-157,545	0.0	-157,545	0.0
7	40.5	39.0	-137,577	0.0	-163,048	0.0	-163,048	0.0	-163,048	0.0	-163,048	0.0
8	42.2	40.7	-132,470	0.0	-160,115	0.0	-160,115	0.0	-160,115	0.0	-160,115	0.0
9	44.9	43.4	-96,595	0.0	-135,738	0.0	-135,738	0.0	-135,738	0.0	-135,738	0.0
10	48.2	45.8	-57,572	0.0	-115,683	0.0	-115,683	0.0	-115,683	0.0	-115,683	0.0
11	51.7	48.3	-32,494	0.0	-100,494	0.0	-100,494	0.0	-100,494	0.0	-100,494	0.0
12	55.0	50.7	-17,122	0.0	-86,817	0.0	-86,817	0.0	-86,817	0.0	-86,817	0.0
13	57.7	52.0	-2,979	0.0	-78,206	0.0	-78,206	0.0	-78,206	0.0	-78,206	0.0
14	59.5	52.6	0	0.0	-62,433	0.0	-62,433	0.0	-62,433	0.0	-62,433	0.0
15	60.1	52.7	0	0.0	-50,041	0.0	-50,041	0.0	-50,041	0.0	-50,041	0.0
16	59.9	52.6	0	0.0	-34,101	0.0	-34,101	0.0	-34,101	0.0	-34,101	0.0
17	59.2	52.1	0	0.0	-32,336	0.0	-32,336	0.0	-32,336	0.0	-32,336	0.0
18	58.2	51.8	0	0.0	-41,936	0.0	-41,936	0.0	-41,936	0.0	-41,936	0.0
19	56.8	52.2	0	0.0	-50,861	0.0	-50,861	0.0	-50,861	0.0	-50,861	0.0
20	55.0	51.4	0	0.0	-60,128	0.0	-60,128	0.0	-60,128	0.0	-60,128	0.0
21	53.1	50.1	0	0.0	-70,977	0.0	-70,977	0.0	-70,977	0.0	-70,977	0.0
22	51.0	48.1	0	0.0	-83,486	0.0	-83,486	0.0	-83,486	0.0	-83,486	0.0
23	48.9	46.2	-41,381	0.0	-95,273	0.0	-95,273	0.0	-95,273	0.0	-95,273	0.0
24	46.9	44.1	-87,655	0.0	-104,991	0.0	-104,991	0.0	-104,991	0.0	-104,991	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 25412 (15 BUILDINGS)

-----CARD 08-- Climatic Information ---

Weather Code	Summer Clearness Number	Winter Clearness Number	Summer Design Dry Bulb	Summer Design Wet Bulb	Winter Design Dry Bulb	Building Orientation	Summer Ground Reflect	Winter Ground Reflect
AUGUSTA						90		

-----CARD 09-- Load Simulation Periods--

1st Month Cooling Simulation	Last Month Cooling Simulation	Peak Cooling Load Hr	1st Month Summer Period	Last Month Summer Period	1st Month Daylight Savings	Last Month Daylight Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters----------------------------

Cooling Load Method	Heating Load Method	Ventilation Method	Airflow Input Units	Airflow Output Units	Room Circulation Rate	Put Wall RA Load to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

--------------------- Load Section Alternative #1 ---------------------

---- Load Alternative ----

Number	Description
1	BACHELOR ENLISTED QUATERS

-----CARD 20-- General Room Parameters ---

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
1	1	ALL THREE FLOORS	7455		2	0		10	3		

-----CARD 21-- Thermostat Parameters ---

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters ---

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters ---

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	162	9.5		200	0			
1	2	46.25	9.5		200	90			
1	3	162	9.5		200	180			
1	4	46.25	9.5		200	270			

-----CARD 25-- Wall/Glass Parameters ---

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	2	4	38	1.03	.87					
1	3	2	4	38	1.03	.87					

-----CARD 26-- Schedules ---

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights ---

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting ---- Reference Point 1	Reference Point 2
1	31	PEOPLE	255	325	1.3	WATT-SF	INCAND				

-----CARD 28--- Miscellaneous Equipment ---

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	WASHERS	288	WATTS	FGHEAT						
1	2	DRYER	5.2	KW	FGHEAT						
1	3	REFRIG	1.6	KW	FGHEAT						
1	4	MICROWAVE	400	WATTS	FGHEAT						
1	5	COFFEE POT	1000	BTUH	FGHEAT						
1	6	TELEVISION	.3	KW	FGHEAT						

-----CARD 29--- Room Airflows ---

	--------------Ventilation--------------				--------------Infiltration------------				--Reheat Minimum--	
Room	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----			
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.15	CFM-SF		

-----CARD 30- Fan Airflows ---

	---------------Main---------------				-------------Auxiliary------------				--Room Exhaust--	
Room	----Cooling----		----Heating----		----Cooling----		----Heating----			
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	1	CFM-SF	1	CFM-SF						

--------------------- System Section Alternative #1 ---------------------

-----CARD 39-- System Alternative -----

Number	Description
1	FAN COILS SYSTEM

-----CARD 40--- System Type ---

		-----------OPTIONAL VENTILATION SYSTEM------------					
System Set Number	System Type	Ventil Deck Location	Cooling SADBVh	Heating SADBVh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	FC						

-----CARD 41-- Zone Assignment --

System Set Number	Ref #1		Ref #2		Ref #3		Ref #4		Ref #5		Ref #6	
	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
1	1	1										

-----CARD 42--- Fan SP and Duct Parameters--

System Set Number	Cool Fan SP	Heat Fan SP	Return Fan SP	Mn Exh Fan SP	Aux Fan SP	Rm Exh Fan SP	Cool Fan Mtr Loc	Return Fan Mtr Loc	Supply Duct Ht Gn	Supply Duct Loc	Return Air Path
1											

-----CARD 48-- Cooling Capacity Overrides --

System Set Number	People Variance	Lights Variance	Misc Loads Variance	Capacity Value	Capacity Units	Capacity Sizing	Capacity Location	Capacity Value	Capacity Units
				------------MAIN COOLING------------				---AUX COOLING---	
1									

Utility Description Reference Table

    Schedules:
        CLGCONST SAMPLE COOLING TSTAT SCHEDULE
        FGHEAT SCHD FOR HEAT LOAD CALCS
        HTGCONST SAMPLE HEATING TSTAT SCHEDULE
        YES AVAILABLE (100%)
    System:
        FC FAN COIL

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Util Percent
----   ------------
  0   0
 24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Util Percent
----   ------------
  0   0
 24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   100
 24

```
******************************************************************************
******************************************************************************
**                                                                          **
**                 T R A C E   6 0 0   A N A L Y S I S                       **
**                                                                          **
**              by                    **                                     
**                                                                          **
******************************************************************************
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ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 25423 (2 BUILDINGS)

Weather File Code:	AUGUSTA
Location:	FORT GORDON, GEORGIA
Latitude:	33.0 (deg)
Longitude:	82.0 (deg)
Time Zone:	5
Elevation:	143 (ft)
Barometric Pressure:	29.8 (in. Hg)

Summer Clearness Number:	0.90
Winter Clearness Number:	0.90
Summer Design Dry Bulb:	95 (F)
Summer Design Wet Bulb:	76 (F)
Winter Design Dry Bulb:	23 (F)
Summer Ground Relectance:	0.20
Winter Ground Relectance:	0.20

Air Density:	0.0756 (Lbm/cuft)
Air Specific Heat:	0.2444 (Btu/lbm/F)
Density-Specific Heat Prod:	1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor:	4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor:	4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April   To October
System Simulation Period: January   To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 19:38:28   8/16/94
Dataset Name: FGTYPS37 .TM

System   1   Peak   SZ   - SINGLE ZONE

```
***************************** COOLING COIL PEAK ************************************ CLG SPACE PEAK ************ HEATING COIL PEAK ********
Peaked at Time ==)              Mo/Hr:  8/16                    *     Mo/Hr:  6/17     *          Mo/Hr: 13/ 1
Outside Air ==)         OADB/WB/HR:  96/ 76/105.0               *     OADB:  98        *           OADB:  23
                                                               *                       *
                  Space    Ret. Air  Ret. Air      Net  Percnt *    Space    Percnt *  Space Peak  Coil Peak   Percnt
                Sens.+Lat. Sensible  Latent       Total  Of Tot *  Sensible  Of Tot *  Space Sens  Tot Sens   Of Tot
Envelope Loads   (Btuh)    (Btuh)    (Btuh)      (Btuh)   (%)   *   (Btuh)    (%)   *   (Btuh)     (Btuh)     (%)
  Skylite Solr       0          0                     0   0.00  *       0     0.00  *       0          0       0.00
  Skylite Cond       0          0                     0   0.00  *       0     0.00  *       0          0       0.00
  Roof Cond          0     66,632                66,632  21.83  *       0     0.00  *       0    -37,644      12.10
  Glass Solar   80,850          0                80,850  26.49  *  91,140    50.29  *       0          0       0.00
  Glass Cond    29,525          0                29,525   9.67  *  33,462    18.46  * -74,494    -74,494      23.95
  Wall Cond     17,082      6,999                24,081   7.89  *  19,631    10.83  * -38,243    -55,696      17.91
  Partition         0                                 0   0.00  *       0     0.00  *       0          0       0.00
  Exposed Floor     0                                 0   0.00  *       0     0.00  *       0          0       0.00
  Infiltration  31,483                           31,483  10.32  *  20,290    11.20  * -49,195    -49,195      15.82
  Sub Total==)  158,939     73,631              232,570  76.20  * 164,523    90.78  *-161,931   -217,028      69.77
Internal Loads                                                 *                       *
  Lights            0          0                     0   0.00  *       0     0.00  *       0          0       0.00
  People            0                                 0   0.00  *       0     0.00  *       0          0       0.00
  Misc              0          0         0           0   0.00  *       0     0.00  *       0          0       0.00
  Sub Total==)      0          0         0           0   0.00  *       0     0.00  *       0          0       0.00
Ceiling Load    16,357    -16,357                   0   0.00  *  16,709     9.22  * -12,240          0       0.00
Outside Air         0          0         0     79,075  25.91  *       0     0.00  *       0    -98,850      31.78
Sup. Fan Heat                                        0   0.00  *             0.00  *                 0       0.00
Ret. Fan Heat                  0                     0   0.00  *             0.00  *                 0       0.00
Duct Heat Pkup                 0                     0   0.00  *             0.00  *                 0       0.00
OV/UNDR Sizing      0                                0   0.00  *       0     0.00  *       0          0       0.00
Exhaust Heat              -6,447         0     -6,447  -2.11  *             0.00  *             4,824      -1.55
Terminal Bypass                0         0           0   0.00  *             0.00  *                 0       0.00
                                                               *                       *
Grand Total==)  175,297     50,826        0    305,197 100.00  * 181,232   100.00  *-174,171   -311,054     100.00
```

```
---------------------------------COOLING COIL SELECTION-------------------------------------    --------------AREAS--------------
           Total Capacity  Sens Cap.  Coil Airfl    Entering DB/WB/HR     Leaving DB/WB/HR    Gross Total    Glass (sf) (%)
           (Tons)  (Mbh)    (Mbh)      (cfm)    Deg F  Deg F  Grains  Deg F  Deg F  Grains   Floor    17,589
Main Clg   25.4   305.2    259.4      17,589    80.0   67.9   84.0    65.7   62.9   81.9    Part         0
Aux  Clg    0.0     0.0      0.0          0      0.0    0.0    0.0     0.0    0.0    0.0    ExFlr        0
Opt Vent    0.0     0.0      0.0          0      0.0    0.0    0.0     0.0    0.0    0.0    Roof     17,589       0     0
Totals     25.4   305.2                                                                   Wall      9,854   1,470    15
```

```
------------HEATING COIL SELECTION-------------    --------AIRFLOWS (cfm)--------   --ENGINEERING CHECKS--   --TEMPERATURES (F)---
          Capacity  Coil Airfl  Ent    Lvg     Type     Cooling   Heating    Clg % OA          11.3    Type     Clg    Htg
          (Mbh)     (cfm)      Deg F  Deg F    Vent      1,980     1,980     Clg Cfm/Sqft       1.00    SADB    65.7   76.9
Main Htg  -311.1    17,589     61.0   76.9    Infil       788       985     Clg Cfm/Ton      691.58    Plenum  77.9   65.8
Aux  Htg    0.0         0      0.0    0.0     Supply    17,589    17,589     Clg Sqft/Ton     691.58    Return  77.9   65.8
Preheat   -92.2    17,589     61.0   65.7    Mincfm        0         0      Clg Btuh/Sqft     17.35    Ret/OA  80.0   61.0
Reheat      0.0         0      0.0    0.0     Return    17,589    17,589     No. People         132    Runarnd 75.0   68.0
Humidif     0.0         0      0.0    0.0     Exhaust    1,980     1,980     Htg % OA          11.3    Fn MtrTD 0.0    0.0
Opt Vent    0.0         0      0.0    0.0     Rm Exh        0         0      Htg Cfm/SqFt       1.00    Fn BldTD 0.0    0.0
Total     -311.1                             Auxil         0         0      Htg Btuh/SqFt    -17.68    Fn Frict 0.0    0.0
```

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

January			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-230,671	0.0	-194,546	0.0	-194,546	0.0	-194,546	0.0	-194,546	0.0
2	32.9	30.7	-218,811	0.0	-199,362	0.0	-199,362	0.0	-199,362	0.0	-199,362	0.0
3	33.1	31.3	-210,094	0.0	-201,001	0.0	-201,001	0.0	-201,001	0.0	-201,001	0.0
4	33.9	32.1	-204,544	0.0	-197,475	0.0	-197,475	0.0	-197,475	0.0	-197,475	0.0
5	35.2	33.5	-199,798	0.0	-197,427	0.0	-197,427	0.0	-197,427	0.0	-197,427	0.0
6	37.0	35.4	-193,987	0.0	-193,583	0.0	-193,583	0.0	-193,583	0.0	-193,583	0.0
7	39.0	37.6	-188,799	0.0	-185,187	0.0	-185,187	0.0	-185,187	0.0	-185,187	0.0
8	41.3	40.1	-181,602	0.0	-179,710	0.0	-179,710	0.0	-179,710	0.0	-179,710	0.0
9	43.7	42.5	-155,064	0.0	-158,613	0.0	-158,613	0.0	-158,613	0.0	-158,613	0.0
10	46.1	44.0	-97,789	0.0	-141,628	0.0	-141,628	0.0	-141,628	0.0	-141,628	0.0
11	48.4	45.0	-65,477	0.0	-122,199	0.0	-122,199	0.0	-122,199	0.0	-122,199	0.0
12	50.5	45.6	-39,448	0.0	-110,631	0.0	-110,631	0.0	-110,631	0.0	-110,631	0.0
13	52.2	46.1	-24,772	0.0	-100,194	0.0	-100,194	0.0	-100,194	0.0	-100,194	0.0
14	53.5	46.4	-9,868	0.0	-90,255	0.0	-90,255	0.0	-90,255	0.0	-90,255	0.0
15	54.3	46.3	0	0.0	-81,796	0.0	-81,796	0.0	-81,796	0.0	-81,796	0.0
16	54.6	46.1	0	0.0	-77,731	0.0	-77,731	0.0	-77,731	0.0	-77,731	0.0
17	54.0	45.9	0	0.0	-79,129	0.0	-79,129	0.0	-79,129	0.0	-79,129	0.0
18	52.5	45.0	-14,515	0.0	-93,392	0.0	-93,392	0.0	-93,392	0.0	-93,392	0.0
19	50.1	44.8	-57,992	0.0	-109,006	0.0	-109,006	0.0	-109,006	0.0	-109,006	0.0
20	47.1	43.3	-79,930	0.0	-124,676	0.0	-124,676	0.0	-124,676	0.0	-124,676	0.0
21	43.7	40.4	-98,767	0.0	-140,075	0.0	-140,075	0.0	-140,075	0.0	-140,075	0.0
22	40.4	37.3	-111,175	0.0	-158,646	0.0	-158,646	0.0	-158,646	0.0	-158,646	0.0
23	37.3	34.9	-124,599	0.0	-171,372	0.0	-171,372	0.0	-171,372	0.0	-171,372	0.0
24	34.9	32.6	-134,970	0.0	-184,181	0.0	-184,181	0.0	-184,181	0.0	-184,181	0.0

February			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-131,605	0.0	-156,018	0.0	-156,018	0.0	-156,018	0.0	-156,018	0.0
2	39.7	37.1	-140,804	0.0	-166,640	0.0	-166,640	0.0	-166,640	0.0	-166,640	0.0
3	37.8	35.1	-150,018	0.0	-176,334	0.0	-176,334	0.0	-176,334	0.0	-176,334	0.0
4	36.3	33.8	-157,095	0.0	-184,132	0.0	-184,132	0.0	-184,132	0.0	-184,132	0.0
5	35.1	32.6	-162,560	0.0	-193,250	0.0	-193,250	0.0	-193,250	0.0	-193,250	0.0
6	34.4	32.0	-163,446	0.0	-197,768	0.0	-197,768	0.0	-197,768	0.0	-197,768	0.0
7	34.1	31.9	-162,161	0.0	-202,780	0.0	-202,780	0.0	-202,780	0.0	-202,780	0.0
8	34.6	32.4	-151,414	0.0	-199,703	0.0	-199,703	0.0	-199,703	0.0	-199,703	0.0
9	36.0	33.8	-116,919	0.0	-179,946	0.0	-179,946	0.0	-179,946	0.0	-179,946	0.0
10	38.2	34.7	-80,351	0.0	-162,477	0.0	-162,477	0.0	-162,477	0.0	-162,477	0.0
11	40.9	36.2	-46,190	0.0	-147,623	0.0	-147,623	0.0	-147,623	0.0	-147,623	0.0
12	43.9	37.4	-23,488	0.0	-133,666	0.0	-133,666	0.0	-133,666	0.0	-133,666	0.0
13	46.9	39.4	-9,535	0.0	-115,760	0.0	-115,760	0.0	-115,760	0.0	-115,760	0.0
14	49.7	41.4	0	0.0	-102,375	0.0	-102,375	0.0	-102,375	0.0	-102,375	0.0
15	51.8	42.8	0	0.0	-85,456	0.0	-85,456	0.0	-85,456	0.0	-85,456	0.0
16	53.2	43.9	0	0.0	-77,533	0.0	-77,533	0.0	-77,533	0.0	-77,533	0.0
17	53.7	44.2	0	0.0	-76,190	0.0	-76,190	0.0	-76,190	0.0	-76,190	0.0
18	53.4	44.4	0	0.0	-78,773	0.0	-78,773	0.0	-78,773	0.0	-78,773	0.0
19	52.7	44.4	0	0.0	-95,890	0.0	-95,890	0.0	-95,890	0.0	-95,890	0.0
20	51.5	45.2	-45,986	0.0	-104,755	0.0	-104,755	0.0	-104,755	0.0	-104,755	0.0
21	50.0	44.6	-84,400	0.0	-114,131	0.0	-114,131	0.0	-114,131	0.0	-114,131	0.0
22	48.1	43.3	-99,010	0.0	-125,528	0.0	-125,528	0.0	-125,528	0.0	-125,528	0.0
23	46.1	41.8	-112,337	0.0	-133,682	0.0	-133,682	0.0	-133,682	0.0	-133,682	0.0
24	43.9	40.1	-124,225	0.0	-145,013	0.0	-145,013	0.0	-145,013	0.0	-145,013	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

March			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-56,176	0.0	0	0.0	-91,416	0.0	-91,416	0.0	-91,416	0.0
2	48.7	44.6	-67,600	0.0	-41,488	0.0	-104,263	0.0	-104,263	0.0	-104,263	0.0
3	46.6	42.9	-76,393	0.0	-116,730	0.0	-116,711	0.0	-116,711	0.0	-116,711	0.0
4	44.9	41.4	-85,544	0.0	-126,503	0.0	-126,542	0.0	-126,542	0.0	-126,542	0.0
5	43.9	40.8	-91,256	0.0	-132,854	0.0	-132,854	0.0	-132,854	0.0	-132,854	0.0
6	43.5	40.8	-92,013	0.0	-139,398	0.0	-139,398	0.0	-139,398	0.0	-139,398	0.0
7	44.0	41.4	-92,599	0.0	-138,659	0.0	-138,659	0.0	-138,659	0.0	-138,659	0.0
8	45.4	42.7	-60,939	0.0	-122,495	0.0	-122,495	0.0	-122,495	0.0	-122,495	0.0
9	47.7	44.3	-20,435	0.0	-100,817	0.0	-100,817	0.0	-100,817	0.0	-100,817	0.0
10	50.6	45.8	0	0.0	-75,073	0.0	-75,073	0.0	-75,073	0.0	-75,073	0.0
11	53.9	47.4	0	0.0	-48,239	0.0	-48,239	0.0	-48,239	0.0	-48,239	0.0
12	57.4	49.0	0	0.0	-30,485	0.0	-30,485	0.0	-30,485	0.0	-30,485	0.0
13	60.7	50.8	0	0.0	-15,848	0.0	-15,848	0.0	-15,848	0.0	-15,848	0.0
14	63.6	52.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	65.9	53.7	0	8.9	0	0.0	0	0.0	0	0.0	0	0.0
16	67.3	54.4	0	9.5	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	9.1	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	7.4	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	0.0	-30,928	0.0	-30,928	0.0	-30,928	0.0	-30,928	0.0
23	57.1	51.9	0	0.0	-60,117	0.0	-60,117	0.0	-60,117	0.0	-60,117	0.0
24	54.2	49.4	0	0.0	-77,913	0.0	-77,913	0.0	-77,913	0.0	-77,913	0.0

April			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	-3,798	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	-19,086	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2	51.4	-23,013	0.0	0	0.0	-37,521	0.0	-37,521	0.0	-37,521	0.0
6	53.5	50.9	-26,356	0.0	-66,105	0.0	-75,594	0.0	-75,594	0.0	-75,594	0.0
7	53.2	51.1	-12,919	0.0	-72,431	0.0	-72,443	0.0	-72,443	0.0	-72,443	0.0
8	53.9	51.5	0	0.0	-60,078	0.0	-60,084	0.0	-60,084	0.0	-60,084	0.0
9	55.9	52.1	0	0.0	-40,536	0.0	-40,536	0.0	-40,536	0.0	-40,536	0.0
10	58.9	53.2	0	0.0	-7,883	0.0	-7,883	0.0	-7,883	0.0	-7,883	0.0
11	62.6	55.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	66.5	57.3	0	7.5	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	12.1	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	13.4	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	14.6	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	15.2	0	0.6	0	0.6	0	0.6	0	0.6
17	75.6	62.0	0	14.9	0	6.2	0	6.2	0	6.2	0	6.2
18	74.9	61.7	0	13.3	0	5.4	0	5.4	0	5.4	0	5.4
19	73.7	62.0	0	10.0	0	3.9	0	3.9	0	3.9	0	3.9
20	72.1	62.4	0	6.7	0	2.0	0	2.0	0	2.0	0	2.0
21	70.2	63.3	0	4.4	0	0.8	0	0.8	0	0.8	0	0.8
22	68.0	62.5	0	2.5	0	0.0	0	0.0	0	0.0	0	0.0
23	65.7	60.5	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

May			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	65.7	61.5	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
3	63.6	59.7	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	2.1	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	5.0	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	8.1	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	11.2	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	13.7	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	15.6	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	17.1	0	2.6	0	2.6	0	2.6	0	2.6
14	81.9	65.3	0	18.6	0	9.5	0	9.5	0	9.5	0	9.5
15	84.1	66.9	0	19.9	0	11.2	0	11.2	0	11.2	0	11.2
16	84.9	67.1	0	20.2	0	11.8	0	11.8	0	11.8	0	11.8
17	84.6	67.3	0	19.9	0	11.6	0	11.6	0	11.6	0	11.6
18	83.8	67.1	0	18.4	0	11.1	0	11.1	0	11.1	0	11.1
19	82.4	67.5	0	15.8	0	9.6	0	9.6	0	9.6	0	9.6
20	80.6	68.9	0	12.0	0	7.4	0	7.4	0	7.4	0	7.4
21	78.5	71.0	0	9.3	0	6.6	0	6.6	0	6.6	0	6.6
22	76.1	69.9	0	7.3	0	5.1	0	5.1	0	5.1	0	5.1
23	73.4	68.0	0	5.7	0	3.1	0	3.1	0	3.1	0	3.1
24	70.8	65.5	0	4.4	0	1.4	0	1.4	0	1.4	0	1.4

June			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	9.9	0	4.5	0	5.4	0	5.4	0	5.4
2	72.6	68.4	0	8.3	0	3.3	0	3.6	0	3.6	0	3.6
3	70.9	67.3	0	7.2	0	1.8	0	1.9	0	1.9	0	1.9
4	69.6	66.5	0	6.4	0	0.6	0	0.7	0	0.7	0	0.7
5	68.7	65.8	0	5.8	0	0.0	0	0.0	0	0.0	0	0.0
6	68.5	65.7	0	5.6	0	0.0	0	0.0	0	0.0	0	0.0
7	69.0	66.3	0	8.0	0	0.0	0	0.0	0	0.0	0	0.0
8	70.6	66.9	0	11.8	0	3.3	0	3.3	0	3.3	0	3.3
9	73.0	67.7	0	14.8	0	6.3	0	6.3	0	6.3	0	6.3
10	76.1	68.1	0	17.7	0	9.1	0	9.1	0	9.1	0	9.1
11	79.5	69.1	0	20.0	0	11.2	0	11.2	0	11.2	0	11.2
12	82.9	70.1	0	21.9	0	12.9	0	12.9	0	12.9	0	12.9
13	86.0	71.0	0	23.0	0	14.3	0	14.3	0	14.3	0	14.3
14	88.4	72.5	0	24.4	0	16.5	0	16.5	0	16.5	0	16.5
15	90.0	74.0	0	25.4	0	18.8	0	18.8	0	18.8	0	18.8
16	90.5	73.7	0	25.4	0	18.6	0	18.6	0	18.6	0	18.6
17	90.3	74.2	0	25.4	0	18.8	0	18.8	0	18.8	0	18.8
18	89.4	73.9	0	24.5	0	18.3	0	18.3	0	18.3	0	18.3
19	88.1	74.5	0	22.4	0	16.8	0	16.8	0	16.8	0	16.8
20	86.4	75.3	0	17.5	0	13.9	0	13.9	0	13.9	0	13.9
21	84.3	76.5	0	15.1	0	12.4	0	12.4	0	12.4	0	12.4
22	81.9	75.7	0	13.6	0	11.4	0	11.4	0	11.4	0	11.4
23	79.5	74.0	0	11.9	0	9.5	0	9.5	0	9.5	0	9.5
24	77.0	72.1	0	10.6	0	7.5	0	7.5	0	7.5	0	7.5

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

July			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	11.0	0	3.5	0	4.2	0	4.2	0	4.2
2	72.4	69.4	0	8.9	0	2.5	0	2.7	0	2.7	0	2.7
3	71.3	68.4	0	7.8	0	1.3	0	1.4	0	1.4	0	1.4
4	70.5	67.7	0	7.0	0	0.4	0	0.4	0	0.4	0	0.4
5	70.0	67.4	0	6.7	0	0.0	0	0.0	0	0.0	0	0.0
6	69.9	67.5	0	6.3	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	8.5	0	0.0	0	0.0	0	0.0	0	0.0
8	71.7	69.0	0	11.8	0	3.8	0	3.8	0	3.8	0	3.8
9	73.7	69.5	0	14.9	0	7.0	0	7.0	0	7.0	0	7.0
10	76.2	70.6	0	17.4	0	10.1	0	10.1	0	10.1	0	10.1
11	78.9	71.8	0	19.4	0	12.1	0	12.1	0	12.1	0	12.1
12	81.4	73.0	0	21.6	0	13.8	0	13.8	0	13.8	0	13.8
13	83.4	74.4	0	22.7	0	15.1	0	15.1	0	15.1	0	15.1
14	84.8	74.8	0	23.8	0	16.3	0	16.3	0	16.3	0	16.3
15	85.2	75.0	0	24.7	0	17.4	0	17.4	0	17.4	0	17.4
16	85.1	75.0	0	25.4	0	17.4	0	17.4	0	17.4	0	17.4
17	84.6	74.7	0	25.3	0	16.8	0	16.8	0	16.8	0	16.8
18	83.8	74.6	0	23.9	0	16.2	0	16.2	0	16.2	0	16.2
19	82.7	74.6	0	21.2	0	14.8	0	14.8	0	14.8	0	14.8
20	81.4	74.4	0	17.5	0	12.3	0	12.3	0	12.3	0	12.3
21	79.9	74.9	0	15.0	0	10.5	0	10.5	0	10.5	0	10.5
22	78.4	74.0	0	13.4	0	9.0	0	9.0	0	9.0	0	9.0
23	76.8	72.7	0	12.1	0	7.0	0	7.0	0	7.0	0	7.0
24	75.2	71.6	0	11.0	0	5.7	0	5.7	0	5.7	0	5.7

August			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	10.5	0	4.2	0	5.2	0	5.2	0	5.2
2	73.2	70.3	0	8.4	0	3.2	0	3.6	0	3.6	0	3.6
3	71.7	68.9	0	7.3	0	2.0	0	2.1	0	2.1	0	2.1
4	70.4	67.8	0	6.5	0	0.8	0	0.9	0	0.9	0	0.9
5	69.5	66.8	0	5.7	0	0.0	0	0.0	0	0.0	0	0.0
6	68.9	66.4	0	5.6	0	0.0	0	0.0	0	0.0	0	0.0
7	68.7	66.4	0	6.7	0	0.0	0	0.0	0	0.0	0	0.0
8	69.2	66.8	0	10.1	0	0.0	0	0.0	0	0.0	0	0.0
9	70.8	67.7	0	13.6	0	4.0	0	4.0	0	4.0	0	4.0
10	73.2	67.7	0	16.6	0	7.7	0	7.7	0	7.7	0	7.7
11	76.2	68.8	0	18.9	0	9.4	0	9.4	0	9.4	0	9.4
12	79.3	70.3	0	20.7	0	11.1	0	11.1	0	11.1	0	11.1
13	82.3	72.2	0	22.2	0	13.1	0	13.1	0	13.1	0	13.1
14	84.7	73.7	0	23.7	0	15.0	0	15.0	0	15.0	0	15.0
15	86.3	74.6	0	25.0	0	16.9	0	16.9	0	16.9	0	16.9
16	86.8	75.1	0	25.4	0	17.5	0	17.5	0	17.5	0	17.5
17	86.6	75.1	0	24.6	0	17.6	0	17.6	0	17.6	0	17.6
18	86.0	75.3	0	23.0	0	17.3	0	17.3	0	17.3	0	17.3
19	85.1	76.0	0	20.0	0	15.2	0	15.2	0	15.2	0	15.2
20	83.8	76.8	0	16.5	0	13.1	0	13.1	0	13.1	0	13.1
21	82.3	77.2	0	15.0	0	12.1	0	12.1	0	12.1	0	12.1
22	80.6	76.3	0	13.0	0	10.8	0	10.8	0	10.8	0	10.8
23	78.7	75.3	0	11.4	0	9.1	0	9.1	0	9.1	0	9.1
24	76.8	73.7	0	10.4	0	7.1	0	7.1	0	7.1	0	7.1

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

September			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	5.7	0	0.0	0	0.0	0	0.0	0	0.0
2	67.6	65.0	0	4.0	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	2.7	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	1.2	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	3.9	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	7.4	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	10.8	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	13.1	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	14.8	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	16.1	0	1.8	0	1.8	0	1.8	0	1.8
14	81.2	68.4	0	17.7	0	9.4	0	9.4	0	9.4	0	9.4
15	83.0	70.0	0	19.0	0	11.0	0	11.0	0	11.0	0	11.0
16	83.7	70.5	0	19.7	0	12.0	0	12.0	0	12.0	0	12.0
17	83.4	70.5	0	18.8	0	11.8	0	11.8	0	11.8	0	11.8
18	82.8	70.9	0	16.6	0	10.9	0	10.9	0	10.9	0	10.9
19	81.6	72.7	0	13.1	0	9.0	0	9.0	0	9.0	0	9.0
20	80.1	74.7	0	11.2	0	8.0	0	8.0	0	8.0	0	8.0
21	78.3	74.1	0	9.8	0	7.0	0	7.0	0	7.0	0	7.0
22	76.3	72.4	0	7.9	0	5.7	0	5.7	0	5.7	0	5.7
23	74.1	70.7	0	6.2	0	3.7	0	3.7	0	3.7	0	3.7
24	71.8	68.9	0	5.1	0	1.7	0	1.7	0	1.7	0	1.7

October			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	-78,720	0.0	-78,720	0.0	-78,720	0.0
2	50.1	48.6	0	0.0	0	0.0	-92,217	0.0	-92,217	0.0	-92,217	0.0
3	48.4	46.9	0	0.0	-90,605	0.0	-100,362	0.0	-100,362	0.0	-100,362	0.0
4	47.1	45.8	0	0.0	-109,611	0.0	-109,656	0.0	-109,656	0.0	-109,656	0.0
5	46.3	44.8	-48,326	0.0	-116,242	0.0	-116,248	0.0	-116,248	0.0	-116,248	0.0
6	46.0	44.5	-78,396	0.0	-122,940	0.0	-122,940	0.0	-122,940	0.0	-122,940	0.0
7	46.8	45.3	-75,991	0.0	-121,368	0.0	-121,368	0.0	-121,368	0.0	-121,368	0.0
8	48.9	47.5	-49,753	0.0	-105,387	0.0	-105,387	0.0	-105,387	0.0	-105,387	0.0
9	52.2	49.9	-11,652	0.0	-79,367	0.0	-79,367	0.0	-79,367	0.0	-79,367	0.0
10	56.2	52.5	0	0.0	-52,470	0.0	-52,470	0.0	-52,470	0.0	-52,470	0.0
11	60.4	54.4	0	0.0	-26,814	0.0	-26,814	0.0	-26,814	0.0	-26,814	0.0
12	64.4	56.0	0	0.0	-4,631	0.0	-4,631	0.0	-4,631	0.0	-4,631	0.0
13	67.7	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	9.3	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	9.5	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	8.7	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	5.6	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	2.7	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	0.0	-38,568	0.0	-38,568	0.0	-38,568	0.0	-38,568	0.0
24	54.5	52.7	0	0.0	-66,895	0.0	-66,895	0.0	-66,895	0.0	-66,895	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

November			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-68,854	0.0	0	0.0	-87,082	0.0	-87,082	0.0	-87,082	0.0
2	49.4	47.3	-79,380	0.0	-95,723	0.0	-99,387	0.0	-99,387	0.0	-99,387	0.0
3	47.2	45.3	-87,821	0.0	-112,527	0.0	-112,576	0.0	-112,576	0.0	-112,576	0.0
4	45.3	43.4	-95,030	0.0	-122,734	0.0	-122,736	0.0	-122,736	0.0	-122,736	0.0
5	43.9	42.2	-101,513	0.0	-129,769	0.0	-129,769	0.0	-129,769	0.0	-129,769	0.0
6	43.0	41.4	-100,272	0.0	-137,152	0.0	-137,152	0.0	-137,152	0.0	-137,152	0.0
7	42.7	41.2	-97,713	0.0	-141,715	0.0	-141,715	0.0	-141,715	0.0	-141,715	0.0
8	43.5	42.0	-85,017	0.0	-137,461	0.0	-137,461	0.0	-137,461	0.0	-137,461	0.0
9	45.9	44.0	-47,972	0.0	-118,328	0.0	-118,328	0.0	-118,328	0.0	-118,328	0.0
10	49.4	46.6	-11,021	0.0	-93,358	0.0	-93,358	0.0	-93,358	0.0	-93,358	0.0
11	53.8	48.6	0	0.0	-70,380	0.0	-70,380	0.0	-70,380	0.0	-70,380	0.0
12	58.4	50.6	0	0.0	-49,300	0.0	-49,300	0.0	-49,300	0.0	-49,300	0.0
13	62.8	52.6	0	0.0	-31,469	0.0	-31,469	0.0	-31,469	0.0	-31,469	0.0
14	66.3	54.5	0	0.0	-10,839	0.0	-10,839	0.0	-10,839	0.0	-10,839	0.0
15	68.7	55.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	6.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	5.9	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	3.1	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	0.6	-1,558	0.0	-1,558	0.0	-1,558	0.0	-1,558	0.0
20	65.0	59.4	0	0.0	-30,106	0.0	-30,106	0.0	-30,106	0.0	-30,106	0.0
21	62.8	58.2	0	0.0	-39,409	0.0	-39,409	0.0	-39,409	0.0	-39,409	0.0
22	60.2	56.1	0	0.0	-51,564	0.0	-51,564	0.0	-51,564	0.0	-51,564	0.0
23	57.5	54.0	0	0.0	-61,302	0.0	-61,302	0.0	-61,302	0.0	-61,302	0.0
24	54.7	51.7	0	0.0	-75,435	0.0	-75,435	0.0	-75,435	0.0	-75,435	0.0

December			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-100,713	0.0	-132,086	0.0	-132,086	0.0	-132,086	0.0	-132,086	0.0
2	43.2	41.1	-108,974	0.0	-142,545	0.0	-142,545	0.0	-142,545	0.0	-142,545	0.0
3	41.8	39.8	-116,306	0.0	-149,375	0.0	-149,375	0.0	-149,375	0.0	-149,375	0.0
4	40.7	38.7	-122,757	0.0	-156,829	0.0	-156,829	0.0	-156,829	0.0	-156,829	0.0
5	40.1	38.4	-128,040	0.0	-162,030	0.0	-162,030	0.0	-162,030	0.0	-162,030	0.0
6	39.9	38.4	-128,179	0.0	-164,014	0.0	-164,014	0.0	-164,014	0.0	-164,014	0.0
7	40.5	39.0	-125,434	0.0	-166,298	0.0	-166,298	0.0	-166,298	0.0	-166,298	0.0
8	42.2	40.7	-120,787	0.0	-163,254	0.0	-163,254	0.0	-163,254	0.0	-163,254	0.0
9	44.9	43.4	-91,230	0.0	-142,241	0.0	-142,241	0.0	-142,241	0.0	-142,241	0.0
10	48.2	45.8	-57,328	0.0	-119,260	0.0	-119,260	0.0	-119,260	0.0	-119,260	0.0
11	51.7	48.3	-28,323	0.0	-97,444	0.0	-97,444	0.0	-97,444	0.0	-97,444	0.0
12	55.0	50.7	-5,416	0.0	-79,000	0.0	-79,000	0.0	-79,000	0.0	-79,000	0.0
13	57.7	52.0	0	0.0	-64,511	0.0	-64,511	0.0	-64,511	0.0	-64,511	0.0
14	59.5	52.6	0	0.0	-52,559	0.0	-52,559	0.0	-52,559	0.0	-52,559	0.0
15	60.1	52.7	0	0.0	-48,169	0.0	-48,169	0.0	-48,169	0.0	-48,169	0.0
16	59.9	52.6	0	0.0	-41,572	0.0	-41,572	0.0	-41,572	0.0	-41,572	0.0
17	59.2	52.1	0	0.0	-49,329	0.0	-49,329	0.0	-49,329	0.0	-49,329	0.0
18	58.2	51.8	0	0.0	-62,247	0.0	-62,247	0.0	-62,247	0.0	-62,247	0.0
19	56.8	52.2	0	0.0	-73,017	0.0	-73,017	0.0	-73,017	0.0	-73,017	0.0
20	55.0	51.4	0	0.0	-82,655	0.0	-82,655	0.0	-82,655	0.0	-82,655	0.0
21	53.1	50.1	-22,377	0.0	-92,663	0.0	-92,663	0.0	-92,663	0.0	-92,663	0.0
22	51.0	48.1	-72,211	0.0	-101,134	0.0	-101,134	0.0	-101,134	0.0	-101,134	0.0
23	48.9	46.2	-83,680	0.0	-112,924	0.0	-112,924	0.0	-112,924	0.0	-112,924	0.0
24	46.9	44.1	-94,486	0.0	-122,277	0.0	-122,277	0.0	-122,277	0.0	-122,277	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 25423 (2 BUILDINGS)

-----CARD 08-- Climatic Information ---

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods---------------------------------------

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters----------------------------

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

--------------------- Load Section Alternative #1 ---------------------

---- Load Alternative ----
| Number | Description |
| 1 | TRAINING COMPLEX |

-----CARD 20-- General Room Parameters ---

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
1	1	ALL ONE ROOM	17589		2	4		14.5			

-----CARD 21-- Thermostat Parameters --

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters --

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES			.05	195			

-----CARD 24-- Wall Parameters --

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	144	14.5	.15	181	0			
1	2	143	14.5	.15	181	90			
1	3	48	14.5	.15	181	180			
1	4	54	14.5	.15	181	270			
1	5	45.58	14.5	.15	181	180			
1	6	54	14.5	.15	181	90			
1	7	48	14.5	.15	181	180			
1	8	143	14.5	.15	181	270			

-----CARD 25-- Wall/Glass Parameters --

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	5	3	34	1.03	.94					
1	2	26.4	10	1	1.03	.94					
1	4	21.6	10	1	1.03	.94					
1	6	21.6	10	1	1.03	.94					
1	8	26.4	10	1	1.03	.94					

-----CARD 26-- Schedules --

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights --

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting ---- Reference Point 1	Reference Point 2
1	132	PEOPLE	255	325	1.4	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment ---

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	18.9	KW	FGHEAT						

-----CARD 29--- Room Airflows ---

Room Number	--------------Ventilation-------------- -----Cooling----- Value	Units	-----Heating----- Value	Units	--------------Infiltration------------ -----Cooling----- Value	Units	-----Heating----- Value	Units	--Reheat Minimum-- Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.10	CFM-SF		

-----CARD 30- Fan Airflows ---

Room Number	---------------Main--------------- ----Cooling---- Value	Units	----Heating---- Value	Units	------------Auxiliary------------ ----Cooling---- Value	Units	----Heating---- Value	Units	--Room Exhaust-- Value	Units
1	1	CFM-SF	1	CFM-SF						

--------------------- System Section Alternative #1 ---------------------

-----CARD 39-- System Alternative -----

Number	Description
1	SINGLE ZONE SYSTEMS

-----CARD 40--- System Type --

System Set Number	System Type	------------OPTIONAL VENTILATION SYSTEM------------ Ventil Deck Location	Cooling SADBVh	Heating SADBVh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	SZ						

-----CARD 41-- Zone Assignment ---

System Set Number	Ref #1 Begin	End	Ref #2 Begin	End	Ref #3 Begin	End	Ref #4 Begin	End	Ref #5 Begin	End	Ref #6 Begin	End
1	1	1										

```
-----CARD 42--- Fan SP and Duct Parameters-------------------------------------------------
System Cool  Heat  Return  Mn Exh  Aux  Rm Exh  Cool     Return   Supply  Supply  Return
Set    Fan   Fan   Fan     Fan     Fan  Fan     Fan Mtr  Fan Mtr  Duct    Duct    Air
Number SP    SP    SP      SP      SP   SP      Loc      Loc      Ht Gn   Loc     Path
1
```

Utility Description Reference Table

    Schedules:
        CLGCONST   SAMPLE COOLING TSTAT SCHEDULE
        FGHEAT   SCHD FOR HEAT LOAD CALCS
        HTGCONST   SAMPLE HEATING TSTAT SCHEDULE
        YES   AVAILABLE (100%)
    System:
        SZ   SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   0
 24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   0
 24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Temperature
----   ------------
   0   72
  24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   100
 24

```
*********************************************************************
*********************************************************************
**                                                               **
**            T R A C E   6 0 0   A N A L Y S I S                 **
**                                                               **
**            by              **                                 **
**                                                               **
*********************************************************************
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ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 25424 (2 BUILDINGS)

Weather File Code:	AUGUSTA
Location:	FORT GORDON, GEORGIA
Latitude:	33.0 (deg)
Longitude:	82.0 (deg)
Time Zone:	5
Elevation:	143 (ft)
Barometric Pressure:	29.8 (in. Hg)

Summer Clearness Number:	0.90
Winter Clearness Number:	0.90
Summer Design Dry Bulb:	95 (F)
Summer Design Wet Bulb:	76 (F)
Winter Design Dry Bulb:	23 (F)
Summer Ground Relectance:	0.20
Winter Ground Relectance:	0.20

Air Density:	0.0756	(Lbm/cuft)
Air Specific Heat:	0.2444	(Btu/lbm/F)
Density-Specific Heat Prod:	1.1094	(Btu-min./hr/cuft/F)
Latent Heat Factor:	4,883.6	(Btu-min./hr/cuft)
Enthalpy Factor:	4.5387	(Lb-min./hr/cuft)

Design Simulation Period: April   To October
System Simulation Period: January   To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 19:55:43   8/16/94
Dataset Name: FGTYPS38 .TM

System   1   Peak   SZ   - SINGLE ZONE

```
*********************** COOLING COIL PEAK *********************************** CLG SPACE PEAK ************ HEATING COIL PEAK ********
Peaked at Time ==)          Mo/Hr:  8/16                         *      Mo/Hr:  9/16     *           Mo/Hr: 13/ 1
Outside Air ==)             OADB/WB/HR:  96/ 76/105.0            *      OADB:  93        *           OADB:  23
                                                                *                        *
```

Envelope Loads	Space Sens.+Lat. (Btuh)	Ret. Air Sensible (Btuh)	Ret. Air Latent (Btuh)	Net Total (Btuh)	Percnt Of Tot (%)	*	Space Sensible (Btuh)	Percnt Of Tot (%)	*	Space Peak Space Sens (Btuh)	Coil Peak Tot Sens (Btuh)	Percnt Of Tot (%)
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	36,006	0		36,006	21.49	*	30,869	22.07	*	-20,640	-20,640	13.49
Glass Solar	39,600	0		39,600	23.63	*	57,600	41.18	*	0	0	0.00
Glass Cond	12,051	0		12,051	7.19	*	9,888	7.07	*	-30,406	-30,406	19.87
Wall Cond	34,903	0		34,903	20.83	*	35,251	25.20	*	-52,180	-52,180	34.10
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	15,581			15,581	9.30	*	6,276	4.49	*	-19,832	-19,832	12.96
Sub Total==)	138,141	0		138,141	82.44	*	139,883	100.00	*	-123,059	-123,059	80.42
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	29,416	17.56	*	0	0.00	*	0	-29,955	19.58
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==)	138,141	0	0	167,557	100.00	*	139,883	100.00	*	-123,059	-153,013	100.00

```
-------------------------------COOLING COIL SELECTION----------------------------------      --------------AREAS--------------
          Total Capacity   Sens Cap.  Coil Airfl    Entering DB/WB/HR      Leaving DB/WB/HR     Gross Total    Glass (sf)  (%)
          (Tons)   (Mbh)    (Mbh)     (cfm)     Deg F  Deg F  Grains   Deg F  Deg F  Grains   Floor    9,021
Main Clg   14.0    167.6    144.0     9,021     76.4   64.2    70.7    61.0   58.2    68.6    Part     3,048
Aux  Clg    0.0      0.0      0.0         0      0.0    0.0     0.0     0.0    0.0     0.0     ExFlr        0
Opt Vent    0.0      0.0      0.0         0      0.0    0.0     0.0     0.0    0.0     0.0     Roof     9,021          0   0
Totals     14.0    167.6                                                                     Wall     3,972        600  15
```

```
-----------HEATING COIL SELECTION-------------     --------AIRFLOWS (cfm)--------     --ENGINEERING CHECKS--     --TEMPERATURES (F)---
          Capacity  Coil Airfl  Ent    Lvg        Type     Cooling   Heating     Clg % OA         6.7       Type     Clg   Htg
          (Mbh)      (cfm)     Deg F  Deg F       Vent        600       600       Clg Cfm/Sqft     1.00      SADB    61.0  80.3
Main Htg  -153.0     9,021     65.0   80.3        Infil       318       397       Clg Cfm/Ton    646.03      Plenum  75.0  68.0
Aux  Htg     0.0         0      0.0    0.0        Supply     9,021     9,021      Clg Sqft/Ton    646.03      Return  75.0  68.0
Preheat     -0.0     9,021     65.0   61.0        Mincfm        0         0       Clg Btuh/Sqft    18.57      Ret/OA  76.4  65.0
Reheat       0.0         0      0.0    0.0        Return     9,021     9,021      No. People        40       Runarnd 75.0  68.0
Humidif      0.0         0      0.0    0.0        Exhaust     600       600       Htg % OA         6.7       Fn MtrTD 0.0   0.0
Opt Vent     0.0         0      0.0    0.0        Rm Exh        0         0       Htg Cfm/SqFt     1.00      Fn BldTD 0.0   0.0
Total     -153.0                                  Auxil         0         0       Htg Btuh/SqFt  -16.96      Fn Frict 0.0   0.0
```

System   2   Block   UH   - UNIT HEATERS

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*************************** COOLING COIL PEAK ********************************** CLG SPACE PEAK ************ HEATING COIL PEAK ********
Peaked at Time ==)          Mo/Hr:  0/ 0                        *      Mo/Hr:  0/ 0      *              Mo/Hr: 13/ 1
Outside Air ==)        OADB/WB/HR:   0/  0/  0.0                *      OADB:   0         *              OADB:  23
                                                               *                        *
                   Space    Ret. Air  Ret. Air      Net  Percnt *     Space   Percnt *  Space Peak   Coil Peak    Percnt
              Sens.+Lat.    Sensible   Latent      Total  Of Tot *  Sensible   Of Tot *  Space Sens   Tot Sens     Of Tot
                  (Btuh)     (Btuh)    (Btuh)      (Btuh)    (%)  *    (Btuh)     (%)  *    (Btuh)      (Btuh)       (%)
Envelope Loads
  Skylite Solr       0          0                     0   0.00  *        0    0.00   *       0           0         0.00
  Skylite Cond       0          0                     0   0.00  *        0    0.00   *       0           0         0.00
  Roof Cond          0          0                     0   0.00  *        0    0.00   *    -33,471     -33,471     24.56
  Glass Solar        0          0                     0   0.00  *        0    0.00   *       0           0         0.00
  Glass Cond         0          0                     0   0.00  *        0    0.00   *       0           0         0.00
  Wall Cond          0          0                     0   0.00  *        0    0.00   *    -70,360     -70,360     51.63
  Partition          0                                0   0.00  *        0    0.00   *       0           0         0.00
  Exposed Floor      0                                0   0.00  *        0    0.00   *       0           0·        0.00
  Infiltration       0                                0   0.00  *        0    0.00   *    -22,703     -22,703     16.66
  Sub Total==)       0          0                     0   0.00  *        0    0.00   *   -126,534    -126,534     92.86
Internal Loads                                                 *                        *
  Lights             0          0                     0   0.00  *        0    0.00   *       0           0         0.00
  People             0                                0   0.00  *        0    0.00   *       0           0         0.00
  Misc               0          0         0           0   0.00  *        0    0.00   *       0           0         0.00
  Sub Total==)       0          0         0           0   0.00  *        0    0.00   *       0           0         0.00
Ceiling Load         0          0                     0   0.00  *        0    0.00   *       0           0         0.00
Outside Air          0          0         0           0   0.00  *        0    0.00   *       0        -9,735      7.14
Sup. Fan Heat                                         0   0.00  *             0.00   *                   0         0.00
Ret. Fan Heat                   0                     0   0.00  *             0.00   *                   0         0.00
Duct Heat Pkup                  0                     0   0.00  *             0.00   *                   0         0.00
OV/UNDR Sizing       0                               0   0.00  *        0    0.00   *       0           0         0.00
Exhaust Heat                    0         0           0   0.00  *             0.00   *                   0         0.00
Terminal Bypass                 0         0           0   0.00  *             0.00   *                   0         0.00
                                                               *                        *
Grand Total==)       0          0         0           0   0.00  *        0    0.00   *   -126,534    -136,269    100.00
```

```
-------------------------------------COOLING COIL SELECTION-------------------------------------   --------------AREAS--------------
           Total Capacity   Sens Cap.  Coil Airfl     Entering DB/WB/HR     Leaving DB/WB/HR    Gross Total     Glass (sf)  (%)
           (Tons)  (Mbh)     (Mbh)       (cfm)     Deg F  Deg F  Grains   Deg F  Deg F  Grains   Floor  14,628
Main Clg    0.0    0.0        0.0           0       0.0    0.0    0.0      0.0    0.0    0.0      Part    3,048
Aux  Clg    0.0    0.0        0.0           0       0.0    0.0    0.0      0.0    0.0    0.0      ExFlr      0
Opt Vent    0.0    0.0        0.0           0       0.0    0.0    0.0      0.0    0.0    0.0      Roof   14,628        0    0
Totals      0.0    0.0                                                                           Wall    4,548        0    0
```

```
------------HEATING COIL SELECTION------------   --------AIRFLOWS (cfm)--------   --ENGINEERING CHECKS--    --TEMPERATURES (F)---
         Capacity  Coil Airfl   Ent    Lvg       Type     Cooling   Heating      Clg % OA        0.0     Type     Clg    Htg
          (Mbh)     (cfm)     Deg F  Deg F       Vent         0       195        Clg Cfm/Sqft    0.00    SADB     0.0   75.8
Main Htg  -136.3   14,628      67.4   75.8       Infil        0       455        Clg Cfm/Ton     0.00    Plenum   0.0   68.0
Aux  Htg    0.0        0        0.0    0.0       Supply       0    14,628        Clg Sqft/Ton    0.00    Return   0.0   68.0
Preheat     0.0        0        0.0    0.0       Mincfm       0         0        Clg Btuh/Sqft   0.00    Ret/OA   0.0   67.4
Reheat      0.0        0        0.0    0.0       Return       0    14,628        No. People        0     Runarnd  0.0   68.0
Humidif     0.0        0        0.0    0.0       Exhaust      0       195        Htg % OA        1.3     Fn MtrTD 0.0    0.0
Opt Vent    0.0        0        0.0    0.0       Rm Exh       0         0        Htg Cfm/SqFt    1.00    Fn BldTD 0.0    0.0
Total    -136.3                                  Auxil        0         0        Htg Btuh/SqFt  -9.32    Fn Frict 0.0    0.0
```

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

January			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-245,805	0.0	-17,842	0.0	-75,802	0.0	-75,802	0.0	-75,802	0.0
2	32.9	30.7	-203,794	0.0	-80,635	0.0	-80,635	0.0	-80,635	0.0	-80,635	0.0
3	33.1	31.3	-103,166	0.0	-85,141	0.0	-85,141	0.0	-85,141	0.0	-85,141	0.0
4	33.9	32.1	-64,289	0.0	-87,568	0.0	-87,568	0.0	-87,568	0.0	-87,568	0.0
5	35.2	33.5	-69,458	0.0	-90,960	0.0	-90,960	0.0	-90,960	0.0	-90,960	0.0
6	37.0	35.4	-73,057	0.0	-90,164	0.0	-90,164	0.0	-90,164	0.0	-90,164	0.0
7	39.0	37.6	-72,669	0.0	-88,457	0.0	-88,457	0.0	-88,457	0.0	-88,457	0.0
8	41.3	40.1	-74,383	0.0	-86,993	0.0	-86,993	0.0	-86,993	0.0	-86,993	0.0
9	43.7	42.5	-60,835	0.0	-78,131	0.0	-78,131	0.0	-78,131	0.0	-78,131	0.0
10	46.1	44.0	-37,590	0.0	-68,612	0.0	-68,612	0.0	-68,612	0.0	-68,612	0.0
11	48.4	45.0	-11,842	0.0	-51,112	0.0	-51,112	0.0	-51,112	0.0	-51,112	0.0
12	50.5	45.6	0	0.0	-35,006	0.0	-35,006	0.0	-35,006	0.0	-35,006	0.0
13	52.2	46.1	0	0.0	-19,265	0.0	-19,265	0.0	-19,265	0.0	-19,265	0.0
14	53.5	46.4	0	0.0	-8,330	0.0	-8,330	0.0	-8,330	0.0	-8,330	0.0
15	54.3	46.3	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0
16	54.6	46.1	0	6.0	0	0.0	0	0.0	0	0.0	0	0.0
17	54.0	45.9	0	5.6	0	0.0	0	0.0	0	0.0	0	0.0
18	52.5	45.0	0	3.8	0	0.0	0	0.0	0	0.0	0	0.0
19	50.1	44.8	0	1.9	-4,886	0.0	-4,886	0.0	-4,886	0.0	-4,886	0.0
20	47.1	43.3	0	0.4	-25,590	0.0	-25,590	0.0	-25,590	0.0	-25,590	0.0
21	43.7	40.4	0	0.0	-36,486	0.0	-36,486	0.0	-36,486	0.0	-36,486	0.0
22	40.4	37.3	0	0.0	-49,467	0.0	-49,467	0.0	-49,467	0.0	-49,467	0.0
23	37.3	34.9	0	0.0	-57,595	0.0	-57,595	0.0	-57,595	0.0	-57,595	0.0
24	34.9	32.6	0	0.0	-68,772	0.0	-68,772	0.0	-68,772	0.0	-68,772	0.0

February			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-38,141	0.0	0	0.0	-59,795	0.0	-59,795	0.0	-59,795	0.0
2	39.7	37.1	-48,256	0.0	-61,382	0.0	-66,143	0.0	-66,143	0.0	-66,143	0.0
3	37.8	35.1	-54,137	0.0	-72,450	0.0	-72,450	0.0	-72,450	0.0	-72,450	0.0
4	36.3	33.8	-59,917	0.0	-77,517	0.0	-77,517	0.0	-77,517	0.0	-77,517	0.0
5	35.1	32.6	-64,519	0.0	-83,540	0.0	-83,540	0.0	-83,540	0.0	-83,540	0.0
6	34.4	32.0	-68,232	0.0	-87,741	0.0	-87,741	0.0	-87,741	0.0	-87,741	0.0
7	34.1	31.9	-71,094	0.0	-92,169	0.0	-92,169	0.0	-92,169	0.0	-92,169	0.0
8	34.6	32.4	-68,513	0.0	-94,536	0.0	-94,536	0.0	-94,536	0.0	-94,536	0.0
9	36.0	33.8	-56,103	0.0	-87,527	0.0	-87,527	0.0	-87,527	0.0	-87,527	0.0
10	38.2	34.7	-37,241	0.0	-78,161	0.0	-78,161	0.0	-78,161	0.0	-78,161	0.0
11	40.9	36.2	-10,053	0.0	-63,039	0.0	-63,039	0.0	-63,039	0.0	-63,039	0.0
12	43.9	37.4	0	0.0	-47,866	0.0	-47,866	0.0	-47,866	0.0	-47,866	0.0
13	46.9	39.4	0	0.0	-29,549	0.0	-29,549	0.0	-29,549	0.0	-29,549	0.0
14	49.7	41.4	0	0.0	-15,104	0.0	-15,104	0.0	-15,104	0.0	-15,104	0.0
15	51.8	42.8	0	0.8	-2,764	0.0	-2,764	0.0	-2,764	0.0	-2,764	0.0
16	53.2	43.9	0	5.7	0	0.0	0	0.0	0	0.0	0	0.0
17	53.7	44.2	0	5.3	0	0.0	0	0.0	0	0.0	0	0.0
18	53.4	44.4	0	4.1	-4,762	0.0	-4,762	0.0	-4,762	0.0	-4,762	0.0
19	52.7	44.4	0	2.3	-13,303	0.0	-13,303	0.0	-13,303	0.0	-13,303	0.0
20	51.5	45.2	0	0.6	-21,819	0.0	-21,819	0.0	-21,819	0.0	-21,819	0.0
21	50.0	44.6	0	0.0	-31,078	0.0	-31,078	0.0	-31,078	0.0	-31,078	0.0
22	48.1	43.3	0	0.0	-40,108	0.0	-40,108	0.0	-40,108	0.0	-40,108	0.0
23	46.1	41.8	0	0.0	-45,287	0.0	-45,287	0.0	-45,287	0.0	-45,287	0.0
24	43.9	40.1	0	0.0	-52,258	0.0	-52,258	0.0	-52,258	0.0	-52,258	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

March			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-7,704	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	48.7	44.6	-14,917	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	46.6	42.9	-21,005	0.0	0	0.0	-24,352	0.0	-24,352	0.0	-24,352	0.0
4	44.9	41.4	-29,390	0.0	-26,366	0.0	-50,867	0.0	-50,867	0.0	-50,867	0.0
5	43.9	40.8	-34,208	0.0	-55,646	0.0	-55,646	0.0	-55,646	0.0	-55,646	0.0
6	43.5	40.8	-37,612	0.0	-60,152	0.0	-60,152	0.0	-60,152	0.0	-60,152	0.0
7	44.0	41.4	-37,412	0.0	-60,605	0.0	-60,605	0.0	-60,605	0.0	-60,605	0.0
8	45.4	42.7	-35,802	0.0	-61,693	0.0	-61,693	0.0	-61,693	0.0	-61,693	0.0
9	47.7	44.3	-21,190	0.0	-55,493	0.0	-55,493	0.0	-55,493	0.0	-55,493	0.0
10	50.6	45.8	-3,554	0.0	-44,661	0.0	-44,661	0.0	-44,661	0.0	-44,661	0.0
11	53.9	47.4	0	0.0	-25,189	0.0	-25,189	0.0	-25,189	0.0	-25,189	0.0
12	57.4	49.0	0	0.0	-3,163	0.0	-3,163	0.0	-3,163	0.0	-3,163	0.0
13	60.7	50.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	63.6	52.7	0	4.4	0	0.0	0	0.0	0	0.0	0	0.0
15	65.9	53.7	0	7.7	0	0.0	0	0.0	0	0.0	0	0.0
16	67.3	54.4	0	8.2	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	7.9	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	6.9	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	5.2	0	0.6	0	0.6	0	0.6	0	0.6
20	64.7	56.0	0	3.5	0	0.2	0	0.2	0	0.2	0	0.2
21	62.5	56.0	0	2.2	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
23	57.1	51.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.2	49.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

April			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2	51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	53.5	50.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	53.2	51.1	0	0.0	-25,057	0.0	-30,753	0.0	-30,753	0.0	-30,753	0.0
8	53.9	51.5	0	0.0	-33,589	0.0	-33,589	0.0	-33,589	0.0	-33,589	0.0
9	55.9	52.1	0	0.0	-28,919	0.0	-28,919	0.0	-28,919	0.0	-28,919	0.0
10	58.9	53.2	0	0.0	-17,272	0.0	-17,272	0.0	-17,272	0.0	-17,272	0.0
11	62.6	55.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	66.5	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	6.1	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	7.7	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	8.4	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	8.8	0	1.9	0	1.9	0	1.9	0	1.9
17	75.6	62.0	0	8.5	0	3.7	0	3.7	0	3.7	0	3.7
18	74.9	61.7	0	7.7	0	3.3	0	3.3	0	3.3	0	3.3
19	73.7	62.0	0	6.5	0	2.8	0	2.8	0	2.8	0	2.8
20	72.1	62.4	0	4.9	0	1.8	0	1.8	0	1.8	0	1.8
21	70.2	63.3	0	3.6	0	1.2	0	1.2	0	1.2	0	1.2
22	68.0	62.5	0	2.6	0	0.4	0	0.4	0	0.4	0	0.4
23	65.7	60.5	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

May			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	1.6	0	0.3	0	0.4	0	0.4	0	0.4
2	65.7	61.5	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
3	63.6	59.7	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	2.9	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	4.4	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	6.0	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	7.6	0	0.0	0	0.0	0	0.0	0	0.0
14	81.9	65.3	0	8.9	0	1.1	0	1.1	0	1.1	0	1.1
15	84.1	66.9	0	9.7	0	5.3	0	5.3	0	5.3	0	5.3
16	84.9	67.1	0	9.9	0	5.6	0	5.6	0	5.6	0	5.6
17	84.6	67.3	0	9.8	0	5.7	0	5.7	0	5.7	0	5.7
18	83.8	67.1	0	9.3	0	5.5	0	5.5	0	5.5	0	5.5
19	82.4	67.5	0	8.0	0	5.1	0	5.1	0	5.1	0	5.1
20	80.6	68.9	0	6.8	0	4.4	0	4.4	0	4.4	0	4.4
21	78.5	71.0	0	5.5	0	3.6	0	3.6	0	3.6	0	3.6
22	76.1	69.9	0	4.5	0	3.0	0	3.0	0	3.0	0	3.0
23	73.4	68.0	0	3.7	0	2.1	0	2.1	0	2.1	0	2.1
24	70.8	65.5	0	2.9	0	1.2	0	1.2	0	1.2	0	1.2

June			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	5.5	0	2.6	0	3.1	0	3.1	0	3.1
2	72.6	68.4	0	4.6	0	2.1	0	2.3	0	2.3	0	2.3
3	70.9	67.3	0	4.0	0	1.5	0	1.5	0	1.5	0	1.5
4	69.6	66.5	0	3.5	0	0.8	0	0.9	0	0.9	0	0.9
5	68.7	65.8	0	3.1	0	0.3	0	0.3	0	0.3	0	0.3
6	68.5	65.7	0	2.8	0	0.0	0	0.0	0	0.0	0	0.0
7	69.0	66.3	0	3.1	0	0.0	0	0.0	0	0.0	0	0.0
8	70.6	66.9	0	3.8	0	0.0	0	0.0	0	0.0	0	0.0
9	73.0	67.7	0	4.8	0	0.5	0	0.5	0	0.5	0	0.5
10	76.1	68.1	0	6.1	0	2.6	0	2.6	0	2.6	0	2.6
11	79.5	69.1	0	7.6	0	4.1	0	4.1	0	4.1	0	4.1
12	82.9	70.1	0	8.9	0	5.3	0	5.3	0	5.3	0	5.3
13	86.0	71.0	0	10.4	0	6.4	0	6.4	0	6.4	0	6.4
14	88.4	72.5	0	11.3	0	7.5	0	7.5	0	7.5	0	7.5
15	90.0	74.0	0	12.3	0	8.7	0	8.7	0	8.7	0	8.7
16	90.5	73.7	0	12.6	0	8.8	0	8.8	0	8.8	0	8.8
17	90.3	74.2	0	12.5	0	8.7	0	8.7	0	8.7	0	8.7
18	89.4	73.9	0	12.0	0	8.6	0	8.6	0	8.6	0	8.6
19	88.1	74.5	0	10.9	0	8.0	0	8.0	0	8.0	0	8.0
20	86.4	75.3	0	9.4	0	7.0	0	7.0	0	7.0	0	7.0
21	84.3	76.5	0	8.2	0	6.4	0	6.4	0	6.4	0	6.4
22	81.9	75.7	0	7.5	0	5.6	0	5.6	0	5.6	0	5.6
23	79.5	74.0	0	6.6	0	4.7	0	4.7	0	4.7	0	4.7
24	77.0	72.1	0	5.9	0	3.7	0	3.7	0	3.7	0	3.7

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

July			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	5.8	0	2.0	0	2.3	0	2.3	0	2.3
2	72.4	69.4	0	4.7	0	1.5	0	1.6	0	1.6	0	1.6
3	71.3	68.4	0	4.1	0	1.2	0	1.3	0	1.3	0	1.3
4	70.5	67.7	0	3.6	0	0.6	0	0.6	0	0.6	0	0.6
5	70.0	67.4	0	3.5	0	0.0	0	0.0	0	0.0	0	0.0
6	69.9	67.5	0	3.2	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	3.4	0	0.0	0	0.0	0	0.0	0	0.0
8	71.7	69.0	0	4.1	0	0.0	0	0.0	0	0.0	0	0.0
9	73.7	69.5	0	4.9	0	0.6	0	0.6	0	0.6	0	0.6
10	76.2	70.6	0	5.9	0	3.0	0	3.0	0	3.0	0	3.0
11	78.9	71.8	0	7.3	0	4.6	0	4.6	0	4.6	0	4.6
12	81.4	73.0	0	9.2	0	6.0	0	6.0	0	6.0	0	6.0
13	83.4	74.4	0	10.5	0	7.1	0	7.1	0	7.1	0	7.1
14	84.8	74.8	0	11.4	0	7.9	0	7.9	0	7.9	0	7.9
15	85.2	75.0	0	12.1	0	8.5	0	8.5	0	8.5	0	8.5
16	85.1	75.0	0	12.4	0	8.6	0	8.6	0	8.6	0	8.6
17	84.6	74.7	0	12.4	0	8.3	0	8.3	0	8.3	0	8.3
18	83.8	74.6	0	11.7	0	7.8	0	7.8	0	7.8	0	7.8
19	82.7	74.6	0	10.7	0	7.5	0	7.5	0	7.5	0	7.5
20	81.4	74.4	0	9.4	0	6.3	0	6.3	0	6.3	0	6.3
21	79.9	74.9	0	8.2	0	5.6	0	5.6	0	5.6	0	5.6
22	78.4	74.0	0	7.1	0	4.6	0	4.6	0	4.6	0	4.6
23	76.8	72.7	0	6.6	0	4.0	0	4.0	0	4.0	0	4.0
24	75.2	71.6	0	5.9	0	3.1	0	3.1	0	3.1	0	3.1

August			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	6.2	0	2.8	0	3.3	0	3.3	0	3.3
2	73.2	70.3	0	4.9	0	2.3	0	2.5	0	2.5	0	2.5
3	71.7	68.9	0	4.3	0	1.7	0	1.8	0	1.8	0	1.8
4	70.4	67.8	0	3.8	0	1.0	0	1.1	0	1.1	0	1.1
5	69.5	66.8	0	3.3	0	0.4	0	0.4	0	0.4	0	0.4
6	68.9	66.4	0	2.9	0	0.0	0	0.0	0	0.0	0	0.0
7	68.7	66.4	0	3.1	0	0.0	0	0.0	0	0.0	0	0.0
8	69.2	66.8	0	3.7	0	0.0	0	0.0	0	0.0	0	0.0
9	70.8	67.7	0	4.7	0	0.0	0	0.0	0	0.0	0	0.0
10	73.2	67.7	0	6.0	0	2.1	0	2.1	0	2.1	0	2.1
11	76.2	68.8	0	8.0	0	3.9	0	3.9	0	3.9	0	3.9
12	79.3	70.3	0	9.6	0	5.8	0	5.8	0	5.8	0	5.8
13	82.3	72.2	0	11.4	0	7.1	0	7.1	0	7.1	0	7.1
14	84.7	73.7	0	12.6	0	8.1	0	8.1	0	8.1	0	8.1
15	86.3	74.6	0	13.6	0	9.3	0	9.3	0	9.3	0	9.3
16	86.8	75.1	0	13.8	0	9.5	0	9.5	0	9.5	0	9.5
17	86.6	75.1	0	13.4	0	9.4	0	9.4	0	9.4	0	9.4
18	86.0	75.3	0	12.5	0	9.1	0	9.1	0	9.1	0	9.1
19	85.1	76.0	0	11.2	0	8.4	0	8.4	0	8.4	0	8.4
20	83.8	76.8	0	9.9	0	7.2	0	7.2	0	7.2	0	7.2
21	82.3	77.2	0	8.8	0	6.7	0	6.7	0	6.7	0	6.7
22	80.6	76.3	0	7.8	0	5.8	0	5.8	0	5.8	0	5.8
23	78.7	75.3	0	6.8	0	4.8	0	4.8	0	4.8	0	4.8
24	76.8	73.7	0	6.1	0	4.2	0	4.2	0	4.2	0	4.2

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
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September			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	4.7	0	1.2	0	1.5	0	1.5	0	1.5
2	67.6	65.0	0	3.3	0	0.5	0	0.6	0	0.6	0	0.6
3	65.8	63.4	0	2.5	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	1.9	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	2.8	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	4.6	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	6.8	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	8.8	0	0.2	0	0.2	0	0.2	0	0.2
13	78.3	66.7	0	10.7	0	6.5	0	6.5	0	6.5	0	6.5
14	81.2	68.4	0	12.3	0	7.7	0	7.7	0	7.7	0	7.7
15	83.0	70.0	0	13.3	0	8.3	0	8.3	0	8.3	0	8.3
16	83.7	70.5	0	13.4	0	8.5	0	8.5	0	8.5	0	8.5
17	83.4	70.5	0	12.8	0	8.3	0	8.3	0	8.3	0	8.3
18	82.8	70.9	0	11.6	0	7.8	0	7.8	0	7.8	0	7.8
19	81.6	72.7	0	10.1	0	6.9	0	6.9	0	6.9	0	6.9
20	80.1	74.7	0	8.8	0	6.2	0	6.2	0	6.2	0	6.2
21	78.3	74.1	0	7.7	0	5.3	0	5.3	0	5.3	0	5.3
22	76.3	72.4	0	6.5	0	4.3	0	4.3	0	4.3	0	4.3
23	74.1	70.7	0	5.2	0	3.3	0	3.3	0	3.3	0	3.3
24	71.8	68.9	0	4.4	0	2.4	0	2.4	0	2.4	0	2.4

October			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	50.1	48.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	48.4	46.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	47.1	45.8	0	0.0	0	0.0	-22,654	0.0	-22,654	0.0	-22,654	0.0
5	46.3	44.8	0	0.0	-36,392	0.0	-47,260	0.0	-47,260	0.0	-47,260	0.0
6	46.0	44.5	0	0.0	-51,955	0.0	-51,955	0.0	-51,955	0.0	-51,955	0.0
7	46.8	45.3	-4,852	0.0	-51,772	0.0	-51,772	0.0	-51,772	0.0	-51,772	0.0
8	48.9	47.5	-22,974	0.0	-50,087	0.0	-50,087	0.0	-50,087	0.0	-50,087	0.0
9	52.2	49.9	-7,458	0.0	-40,279	0.0	-40,279	0.0	-40,279	0.0	-40,279	0.0
10	56.2	52.5	0	0.0	-24,183	0.0	-24,183	0.0	-24,183	0.0	-24,183	0.0
11	60.4	54.4	0	0.0	-1,181	0.0	-1,181	0.0	-1,181	0.0	-1,181	0.0
12	64.4	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	67.7	57.3	0	3.9	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	8.5	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	9.7	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	9.8	0	3.0	0	3.0	0	3.0	0	3.0
17	69.5	57.3	0	9.3	0	3.7	0	3.7	0	3.7	0	3.7
18	68.2	57.7	0	7.4	0	2.8	0	2.8	0	2.8	0	2.8
19	66.5	60.6	0	5.8	0	1.9	0	1.9	0	1.9	0	1.9
20	64.4	60.8	0	4.3	0	0.9	0	0.9	0	0.9	0	0.9
21	62.1	59.4	0	2.8	0	0.3	0	0.3	0	0.3	0	0.3
22	59.6	57.3	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
24	54.5	52.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEMS

November			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	49.4	47.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	47.2	45.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	45.3	43.4	0	0.0	-6,893	0.0	-37,870	0.0	-37,870	0.0	-37,870	0.0
5	43.9	42.2	-9,760	0.0	-52,217	0.0	-52,217	0.0	-52,217	0.0	-52,217	0.0
6	43.0	41.4	-35,652	0.0	-57,121	0.0	-57,121	0.0	-57,121	0.0	-57,121	0.0
7	42.7	41.2	-38,115	0.0	-60,942	0.0	-60,942	0.0	-60,942	0.0	-60,942	0.0
8	43.5	42.0	-33,587	0.0	-59,897	0.0	-59,897	0.0	-59,897	0.0	-59,897	0.0
9	45.9	44.0	-15,817	0.0	-53,015	0.0	-53,015	0.0	-53,015	0.0	-53,015	0.0
10	49.4	46.6	0	0.0	-36,931	0.0	-36,931	0.0	-36,931	0.0	-36,931	0.0
11	53.8	48.6	0	0.0	-19,273	0.0	-19,273	0.0	-19,273	0.0	-19,273	0.0
12	58.4	50.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	62.8	52.6	0	1.7	0	0.0	0	0.0	0	0.0	0	0.0
14	66.3	54.5	0	8.3	0	0.0	0	0.0	0	0.0	0	0.0
15	68.7	55.7	0	9.3	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	9.5	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	8.8	0	1.2	0	1.2	0	1.2	0	1.2
18	68.3	57.0	0	6.8	0	2.2	0	2.2	0	2.2	0	2.2
19	66.9	59.4	0	5.2	0	1.4	0	1.4	0	1.4	0	1.4
20	65.0	59.4	0	3.7	0	0.5	0	0.5	0	0.5	0	0.5
21	62.8	58.2	0	2.3	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2	56.1	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
23	57.5	54.0	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
24	54.7	51.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

December			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	0	0.0	0	0.0	-45,081	0.0	-45,081	0.0	-45,081	0.0
2	43.2	41.1	0	0.0	0	0.0	-54,237	0.0	-54,237	0.0	-54,237	0.0
3	41.8	39.8	0	0.0	-50,854	0.0	-59,603	0.0	-59,603	0.0	-59,603	0.0
4	40.7	38.7	-33,269	0.0	-64,704	0.0	-64,704	0.0	-64,704	0.0	-64,704	0.0
5	40.1	38.4	-47,954	0.0	-68,891	0.0	-68,891	0.0	-68,891	0.0	-68,891	0.0
6	39.9	38.4	-48,821	0.0	-70,511	0.0	-70,511	0.0	-70,511	0.0	-70,511	0.0
7	40.5	39.0	-51,641	0.0	-74,075	0.0	-74,075	0.0	-74,075	0.0	-74,075	0.0
8	42.2	40.7	-52,826	0.0	-75,699	0.0	-75,699	0.0	-75,699	0.0	-75,699	0.0
9	44.9	43.4	-38,066	0.0	-66,772	0.0	-66,772	0.0	-66,772	0.0	-66,772	0.0
10	48.2	45.8	-14,725	0.0	-50,956	0.0	-50,956	0.0	-50,956	0.0	-50,956	0.0
11	51.7	48.3	0	0.0	-33,421	0.0	-33,421	0.0	-33,421	0.0	-33,421	0.0
12	55.0	50.7	0	0.0	-12,852	0.0	-12,852	0.0	-12,852	0.0	-12,852	0.0
13	57.7	52.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	59.5	52.6	0	1.7	0	0.0	0	0.0	0	0.0	0	0.0
15	60.1	52.7	0	7.2	0	0.0	0	0.0	0	0.0	0	0.0
16	59.9	52.6	0	7.6	0	0.0	0	0.0	0	0.0	0	0.0
17	59.2	52.1	0	6.7	0	0.0	0	0.0	0	0.0	0	0.0
18	58.2	51.8	0	4.9	0	0.0	0	0.0	0	0.0	0	0.0
19	56.8	52.2	0	3.2	0	0.0	0	0.0	0	0.0	0	0.0
20	55.0	51.4	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
21	53.1	50.1	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
22	51.0	48.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	48.9	46.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	46.9	44.1	0	0.0	-34,977	0.0	-34,977	0.0	-34,977	0.0	-34,977	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 25424 (2 BUILDINGS)

-----CARD 08-- Climatic Information ---

Weather Code	Summer Clearness Number	Winter Clearness Number	Summer Design Dry Bulb	Summer Design Wet Bulb	Winter Design Dry Bulb	Building Orientation	Summer Ground Reflect	Winter Ground Reflect
AUGUSTA						180		

-----CARD 09-- Load Simulation Periods--

1st Month Cooling Simulation	Last Month Cooling Simulation	Peak Cooling Load Hr	1st Month Summer Period	Last Month Summer Period	1st Month Daylight Savings	Last Month Daylight Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters----------------------------

Cooling Load Method	Heating Load Method	Ventilation Method	Airflow Input Units	Airflow Output Units	Room Circulation Rate	Put Wall RA Load to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

-------------------- Load Section Alternative #1 ---------------------

---- Load Alternative ----

Number	Description
1	BARRACKS COMPLEX

-----CARD 20-- General Room Parameters ---

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
1	1	OFFICE AREA	243.8	37	2	0		13.2			

-----CARD 20-- General Room Parameters --

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	2	STORAGE AREA	243.8	60	2	0		13.2			

-----CARD 21-- Thermostat Parameters --

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO
2		50					HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters --

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				197			
2	1	YES				197			

-----CARD 24-- Wall Parameters --

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	243.8	12.5		196	0			
1	2	37	12.5		196	90			
1	3	37	12.5		196	270			
2	1	60	12.5		196	90			
2	2	243.8	12.5		196	180			
2	3	60	12.5		196	270			

-----CARD 25-- Wall/Glass Parameters --

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	5	3	34	1.03	.94					
1	2	1.5	3	20	1.03	.94					

-----CARD 26-- Schedules --

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights --

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting ---- Reference Point 1	Reference Point 2
1	40	PEOPLE	255	325	2.5	WATT-SF	ASHRAE2				
2	13	PEOPLE	315	435	2	WATT-SF	SUSFLUOR				

-----CARD 28--- Miscellaneous Equipment --

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	P.C.	26.9	KW	FGHEAT						
1	2	COPIER	4.3	KW	FGHEAT						
1	3	REFRIG	5.9	KW	FGHEAT						
1	4	MICROWAVE	1600	WATTS	FGHEAT						
1	5	COFFEE POT	.6	KW	FGHEAT						
1	6	TELEVISION	.3	KW	FGHEAT						
1	7	TYPEWRITER	1.1	KW	FGHEAT						
1	8	EWC	4.2	KW	FGHEAT						
1	9	SHREDDER	.8	KW	FGHEAT						
1	10	FAX	.2	KW	FGHEAT						
1	11	DEHUMIDIFIER	.6	KW	FGHEAT						

-----CARD 29--- Room Airflows --

Room Number	Ventilation Cooling Value	Units	Ventilation Heating Value	Units	Infiltration Cooling Value	Units	Infiltration Heating Value	Units	Reheat Minimum Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.10	CFM-SF		
2	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows --

Room Number	Main Cooling Value	Units	Main Heating Value	Units	Auxiliary Cooling Value	Units	Auxiliary Heating Value	Units	Room Exhaust Value	Units
1	1	CFM-SF	1	CFM-SF						
2			1	CFM-SF						

-----CARD 31-- Partition Parameters --

Room Number	Partition Number	Partition Length	Partition Height	Partition U-Value	Const Type	Temp Flag	Cooling Temp	Heating Temp	Adjacent Room No
1	1	243.8	12.5		87				2
2	1	243.8	12.5		87				1

--------------------- System Section Alternative #1 ---------------------

-----CARD 39-- System Alternative -----
Number   Description
1   SINGLE ZONE SYSTEMS

-----CARD 40--- System Type --
            -----------OPTIONAL VENTILATION SYSTEM-----------

System Set Number	System Type	Ventil Deck Location	Cooling SADBVh	Heating SADBVh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	SZ						
2	UH						

-----CARD 41-- Zone Assignment --

System Set Number	Ref #1 Begin	End	Ref #2 Begin	End	Ref #3 Begin	End	Ref #4 Begin	End	Ref #5 Begin	End	Ref #6 Begin	End
1	1	1										
2	2	2										

-----CARD 42--- Fan SP and Duct Parameters--

System Set Number	Cool Fan SP	Heat Fan SP	Return Fan SP	Mn Exh Fan SP	Aux Fan SP	Rm Exh Fan SP	Cool Fan Mtr Loc	Return Fan Mtr Loc	Supply Duct Ht Gn	Supply Duct Loc	Return Air Path
1											
2											

-----CARD 48-- Cooling Capacity Overrides ---

System Set Number	People Variance	Lights Variance	Misc Loads Variance	MAIN COOLING Capacity Value	Capacity Units	Capacity Sizing	Capacity Location	AUX COOLING Capacity Value	Capacity Units
1			75						

Utility Description Reference Table

      Schedules:
            CLGCONST SAMPLE COOLING TSTAT SCHEDULE
            FGHEAT SCHD FOR HEAT LOAD CALCS
            HTGCONST SAMPLE HEATING TSTAT SCHEDULE
            YES AVAILABLE (100%)
      System:
            SZ SINGLE ZONE
            UH   (Utility file not found)

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Temperature
---- ------------
   0   75
  24

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
   0   0
  24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
   0   0
  24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
   0   100
  24

```
********************************************************************
********************************************************************
**                                                                **
**            T R A C E   6 0 0   A N A L Y S I S                  **
**                                                                **
**                by           **                                 **
**                                                                **
********************************************************************
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ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 25440 (1 BUILDING)

Weather File Code:	AUGUSTA
Location:	FORT GORDON, GEORGIA
Latitude:	33.0 (deg)
Longitude:	82.0 (deg)
Time Zone:	5
Elevation:	143 (ft)
Barometric Pressure:	29.8 (in. Hg)

Summer Clearness Number:	0.90
Winter Clearness Number:	0.90
Summer Design Dry Bulb:	95 (F)
Summer Design Wet Bulb:	76 (F)
Winter Design Dry Bulb:	23 (F)
Summer Ground Relectance:	0.20
Winter Ground Relectance:	0.20

Air Density:	0.0756 (Lbm/cuft)
Air Specific Heat:	0.2444 (Btu/lbm/F)
Density-Specific Heat Prod:	1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor:	4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor:	4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April   To October
System Simulation Period: January   To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 20:21:46   8/16/94
Dataset Name: FGTYPS39 .TM

System   1   Block   MZ   - MULTIZONE

```
*************************** COOLING COIL PEAK ******************************* CLG SPACE PEAK ************ HEATING COIL PEAK ********
Peaked at Time ==)          Mo/Hr:  8/15                      *      Mo/Hr:  6/16      *         Mo/Hr: 13/ 1
Outside Air ==)        OADB/WB/HR:  97/ 76/105.0              *      OADB: 100         *         OADB:  23
                                                             *                        *
                   Space   Ret. Air  Ret. Air     Net  Percnt *    Space    Percnt *  Space Peak  Coil Peak   Percnt
               Sens.+Lat.  Sensible   Latent     Total  Of Tot *  Sensible   Of Tot *  Space Sens  Tot Sens   Of Tot
Envelope Loads   (Btuh)    (Btuh)    (Btuh)     (Btuh)   (%)   *   (Btuh)     (%)   *   (Btuh)      (Btuh)      (%)
  Skylite Solr       0         0                    0   0.00   *       0      0.00   *       0           0     0.00
  Skylite Cond       0         0                    0   0.00   *       0      0.00   *       0           0     0.00
  Roof Cond     31,992         0               31,992  30.84   *  33,787     47.72   * -17,557     -17,557    15.17
  Glass Solar    6,503         0                6,503   6.27   *   8,436     11.91   *       0           0     0.00
  Glass Cond     3,530         0                3,530   3.40   *   4,127      5.83   *  -8,906      -8,906     7.70
  Wall Cond     16,453         0               16,453  15.86   *  16,238     22.93   * -24,116     -24,116    20.84
  Partition          0                              0   0.00   *       0      0.00   *       0           0     0.00
  Exposed Floor      0                              0   0.00   *       0      0.00   *       0           0     0.00
  Infiltration  11,039                         11,039  10.64   *   8,218     11.61   * -18,714     -18,714    16.17
  Sub Total==)  69,516         0               69,516  67.00   *  70,806    100.00   * -69,293     -69,293    59.88
Internal Loads                                                *                       *
  Lights             0         0                    0   0.00   *       0      0.00   *       0           0     0.00
  People             0                              0   0.00   *       0      0.00   *       0           0     0.00
  Misc               0         0         0          0   0.00   *       0      0.00   *       0           0     0.00
  Sub Total==)       0         0         0          0   0.00   *       0      0.00   *       0           0     0.00
Ceiling Load         0         0                    0   0.00   *       0      0.00   *       0           0     0.00
Outside Air          0         0         0     34,234  33.00   *       0      0.00   *       0     -46,430    40.12
Sup. Fan Heat                                       0   0.00   *              0.00   *                   0     0.00
Ret. Fan Heat                  0                    0   0.00   *              0.00   *                   0     0.00
Duct Heat Pkup                 0                    0   0.00   *              0.00   *                   0     0.00
OV/UNDR Sizing       0                              0   0.00   *       0      0.00   *       0                 0.00
Exhaust Heat                   0         0          0   0.00   *              0.00   *                   0     0.00
Terminal Bypass                0         0          0  -0.00   *              0.00   *                   0     0.00
                                                             *                       *
Grand Total==)  69,516         0         0    103,750 100.00   *  70,806    100.00   * -69,293    -115,723   100.00
```

```
--------------------------------COOLING COIL SELECTION-------------------------------     -------------AREAS--------------
          Total Capacity   Sens Cap. Coil Airfl   Entering DB/WB/HR    Leaving DB/WB/HR     Gross Total   Glass (sf) (%)
          (Tons)  (Mbh)    (Mbh)      (cfm)      Deg F Deg F Grains   Deg F Deg F Grains   Floor   7,803
Main Clg   8.6    103.7    87.9       7,803      77.6  68.1  88.8     66.8  64.3  86.9     Part       0
Aux  Clg   0.0      0.0     0.0           0       0.0   0.0   0.0      0.0   0.0   0.0     ExFlr      0
Opt Vent   0.0      0.0     0.0           0       0.0   0.0   0.0      0.0   0.0   0.0     Roof    7,803          0     0
Totals     8.6    103.7                                                                   Wall    3,749        176     5
```

```
------------HEATING COIL SELECTION-------------     --------AIRFLOWS (cfm)--------    --ENGINEERING CHECKS--     --TEMPERATURES (F)---
          Capacity  Coil Airfl   Ent    Lvg       Type     Cooling  Heating    Clg % OA        11.9       Type    Clg   Htg
          (Mbh)      (cfm)     Deg F  Deg F      Vent        930      930       Clg Cfm/Sqft     1.00      SADB    66.8  76.0
Main Htg  -79.5     7,803      66.8   76.0       Infil       300      375       Clg Cfm/Ton    902.52      Plenum  75.0  68.0
Aux  Htg    0.0         0       0.0    0.0       Supply     7,803    7,803      Clg Sqft/Ton   902.52      Return  75.0  68.0
Preheat   -36.2     7,803      62.6   66.8       Mincfm        0        0       Clg Btuh/Sqft   13.30      Ret/OA  77.6  62.6
Reheat      0.0         0       0.0    0.0       Return     7,803    7,803      No. People        62      Runarnd 75.0  68.0
Humidif     0.0         0       0.0    0.0       Exhaust     930      930       Htg % OA        11.9       Fn MtrTD 0.0   0.0
Opt Vent    0.0         0       0.0    0.0       Rm Exh        0        0       Htg Cfm/SqFt     1.00      Fn BldTD 0.0   0.0
Total    -115.7                                  Auxil         0        0       Htg Btuh/SqFt  -14.83      Fn Frict 0.0   0.0
```

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI- ZONE SYSTEMS

January			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-58,585	0.0	-79,940	0.0	-76,748	0.0	-76,729	0.0	-76,729	0.0
2	32.9	30.7	-60,425	0.0	-80,161	0.0	-77,580	0.0	-77,565	0.0	-77,565	0.0
3	33.1	31.3	-61,993	0.0	-78,860	0.0	-76,773	0.0	-76,760	0.0	-76,760	0.0
4	33.9	32.1	-62,993	0.0	-76,343	0.0	-74,654	0.0	-74,644	0.0	-74,644	0.0
5	35.2	33.5	-63,431	0.0	-72,893	0.0	-71,527	0.0	-71,519	0.0	-71,519	0.0
6	37.0	35.4	-62,016	0.0	-68,610	0.0	-67,506	0.0	-67,499	0.0	-67,499	0.0
7	39.0	37.6	-59,305	0.0	-64,124	0.0	-63,230	0.0	-63,225	0.0	-63,225	0.0
8	41.3	40.1	-54,795	0.0	-59,050	0.0	-58,327	0.0	-58,323	0.0	-58,323	0.0
9	43.7	42.5	-48,049	0.0	-53,846	0.0	-53,261	0.0	-53,257	0.0	-53,257	0.0
10	46.1	44.0	-39,690	0.0	-48,391	0.0	-47,918	0.0	-47,915	0.0	-47,915	0.0
11	48.4	45.0	-29,607	0.0	-42,684	0.0	-42,302	0.0	-42,299	0.0	-42,299	0.0
12	50.5	45.6	-19,461	0.0	-37,073	0.0	-36,764	0.0	-36,762	0.0	-36,762	0.0
13	52.2	46.1	-11,224	0.0	-32,196	0.0	-31,946	0.0	-31,945	0.0	-31,945	0.0
14	53.5	46.4	-5,051	0.0	-28,132	0.0	-27,931	0.0	-27,930	0.0	-27,930	0.0
15	54.3	46.3	-1,644	0.0	-25,315	0.0	-25,152	0.0	-25,151	0.0	-25,151	0.0
16	54.6	46.1	-1,488	0.0	-23,943	0.0	-23,812	0.0	-23,811	0.0	-23,811	0.0
17	54.0	45.9	-4,043	0.0	-25,168	0.0	-25,062	0.0	-25,062	0.0	-25,062	0.0
18	52.5	45.0	-9,755	0.0	-29,079	0.0	-28,994	0.0	-28,994	0.0	-28,994	0.0
19	50.1	44.8	-17,463	0.0	-35,615	0.0	-35,546	0.0	-35,546	0.0	-35,546	0.0
20	47.1	43.3	-25,573	0.0	-43,640	0.0	-43,584	0.0	-43,584	0.0	-43,584	0.0
21	43.7	40.4	-32,580	0.0	-52,329	0.0	-52,284	0.0	-52,284	0.0	-52,284	0.0
22	40.4	37.3	-38,900	0.0	-60,510	0.0	-60,474	0.0	-60,473	0.0	-60,473	0.0
23	37.3	34.9	-43,810	0.0	-67,949	0.0	-67,919	0.0	-67,919	0.0	-67,919	0.0
24	34.9	32.6	-47,628	0.0	-73,449	0.0	-73,426	0.0	-73,426	0.0	-73,426	0.0

February			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-45,314	0.0	-56,915	0.0	-58,627	0.0	-58,637	0.0	-58,637	0.0
2	39.7	37.1	-48,828	0.0	-62,042	0.0	-63,426	0.0	-63,434	0.0	-63,434	0.0
3	37.8	35.1	-51,746	0.0	-66,744	0.0	-67,862	0.0	-67,869	0.0	-67,869	0.0
4	36.3	33.8	-54,082	0.0	-70,301	0.0	-71,206	0.0	-71,211	0.0	-71,211	0.0
5	35.1	32.6	-55,351	0.0	-73,104	0.0	-73,836	0.0	-73,840	0.0	-73,840	0.0
6	34.4	32.0	-55,125	0.0	-74,693	0.0	-75,284	0.0	-75,288	0.0	-75,288	0.0
7	34.1	31.9	-53,410	0.0	-75,331	0.0	-75,809	0.0	-75,812	0.0	-75,812	0.0
8	34.6	32.4	-49,677	0.0	-74,079	0.0	-74,466	0.0	-74,468	0.0	-74,468	0.0
9	36.0	33.8	-43,990	0.0	-70,553	0.0	-70,866	0.0	-70,868	0.0	-70,868	0.0
10	38.2	34.7	-36,451	0.0	-64,841	0.0	-65,094	0.0	-65,095	0.0	-65,095	0.0
11	40.9	36.2	-27,379	0.0	-57,715	0.0	-57,919	0.0	-57,921	0.0	-57,921	0.0
12	43.9	37.4	-18,108	0.0	-49,775	0.0	-49,940	0.0	-49,941	0.0	-49,941	0.0
13	46.9	39.4	-10,165	0.0	-41,779	0.0	-41,912	0.0	-41,913	0.0	-41,913	0.0
14	49.7	41.4	-4,291	0.0	-34,270	0.0	-34,377	0.0	-34,378	0.0	-34,378	0.0
15	51.8	42.8	-683	0.0	-28,639	0.0	-28,725	0.0	-28,725	0.0	-28,725	0.0
16	53.2	43.9	0	0.0	-24,982	0.0	-25,052	0.0	-25,052	0.0	-25,052	0.0
17	53.7	44.2	-2,213	0.0	-23,873	0.0	-23,929	0.0	-23,930	0.0	-23,930	0.0
18	53.4	44.4	-7,164	0.0	-25,084	0.0	-25,129	0.0	-25,129	0.0	-25,129	0.0
19	52.7	44.4	-13,897	0.0	-27,717	0.0	-27,753	0.0	-27,754	0.0	-27,754	0.0
20	51.5	45.2	-21,553	0.0	-31,861	0.0	-31,890	0.0	-31,890	0.0	-31,890	0.0
21	50.0	44.6	-28,093	0.0	-36,600	0.0	-36,624	0.0	-36,624	0.0	-36,624	0.0
22	48.1	43.3	-34,328	0.0	-42,098	0.0	-42,117	0.0	-42,117	0.0	-42,117	0.0
23	46.1	41.8	-39,403	0.0	-47,551	0.0	-47,567	0.0	-47,567	0.0	-47,567	0.0
24	43.9	40.1	-43,088	0.0	-53,186	0.0	-53,198	0.0	-53,198	0.0	-53,198	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI- ZONE SYSTEMS

March			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-21,808	0.0	-11,934	0.0	-31,683	0.0	-32,121	0.0	-32,130	0.0
2	48.7	44.6	-25,041	0.0	-22,524	0.0	-38,485	0.0	-38,838	0.0	-38,846	0.0
3	46.6	42.9	-27,558	0.0	-30,910	0.0	-43,812	0.0	-44,098	0.0	-44,104	0.0
4	44.9	41.4	-29,860	0.0	-37,583	0.0	-48,016	0.0	-48,247	0.0	-48,252	0.0
5	43.9	40.8	-30,704	0.0	-41,948	0.0	-50,385	0.0	-50,572	0.0	-50,576	0.0
6	43.5	40.8	-29,891	0.0	-44,502	0.0	-51,326	0.0	-51,477	0.0	-51,480	0.0
7	44.0	41.4	-27,448	0.0	-44,636	0.0	-50,155	0.0	-50,277	0.0	-50,280	0.0
8	45.4	42.7	-22,540	0.0	-42,376	0.0	-46,841	0.0	-46,940	0.0	-46,942	0.0
9	47.7	44.3	-15,073	0.0	-37,614	0.0	-41,224	0.0	-41,304	0.0	-41,306	0.0
10	50.6	45.8	-5,440	0.0	-30,918	0.0	-33,836	0.0	-33,901	0.0	-33,902	0.0
11	53.9	47.4	0	0.0	-22,718	0.0	-25,076	0.0	-25,128	0.0	-25,129	0.0
12	57.4	49.0	0	0.0	-13,706	0.0	-15,610	0.0	-15,652	0.0	-15,653	0.0
13	60.7	50.8	0	0.0	-5,162	0.0	-6,699	0.0	-6,733	0.0	-6,733	0.0
14	63.6	52.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	65.9	53.7	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
16	67.3	54.4	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	0.0	-6,363	0.0	-7,192	0.0	-7,210	0.0	-7,211	0.0
23	57.1	51.9	0	0.0	-15,335	0.0	-16,004	0.0	-16,019	0.0	-16,020	0.0
24	54.2	49.4	0	0.0	-23,739	0.0	-24,280	0.0	-24,292	0.0	-24,292	0.0

April			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	-2,581	0.0	0	0.0	-5,996	0.0	-6,844	0.0	-6,935	0.0
5	54.2	51.4	-4,016	0.0	-3,390	0.0	-12,184	0.0	-12,871	0.0	-12,945	0.0
6	53.5	50.9	-3,468	0.0	-9,376	0.0	-16,507	0.0	-17,064	0.0	-17,123	0.0
7	53.2	51.1	-1,461	0.0	-13,590	0.0	-19,364	0.0	-19,814	0.0	-19,862	0.0
8	53.9	51.5	0	0.0	-14,523	0.0	-19,198	0.0	-19,562	0.0	-19,601	0.0
9	55.9	52.1	0	0.0	-11,424	0.0	-15,206	0.0	-15,501	0.0	-15,533	0.0
10	58.9	53.2	0	0.0	-5,110	0.0	-8,168	0.0	-8,407	0.0	-8,432	0.0
11	62.6	55.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	66.5	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	1.0	0	0.3	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	3.2	0	0.3	0	0.3	0	0.3	0	0.3
17	75.6	62.0	0	4.4	0	0.2	0	0.3	0	0.3	0	0.3
18	74.9	61.7	0	3.7	0	0.2	0	0.2	0	0.2	0	0.2
19	73.7	62.0	0	2.5	0	0.0	0	0.0	0	0.0	0	0.0
20	72.1	62.4	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0
21	70.2	63.3	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
22	68.0	62.5	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
23	65.7	60.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI- ZONE SYSTEMS

May			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	65.7	61.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	63.6	59.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	2.0	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	4.9	0	0.1	0	0.1	0	0.1	0	0.1
13	78.5	63.7	0	5.8	0	0.5	0	0.5	0	0.5	0	0.5
14	81.9	65.3	0	6.4	0	0.7	0	0.7	0	0.7	0	0.7
15	84.1	66.9	0	6.7	0	0.8	0	0.8	0	0.8	0	0.8
16	84.9	67.1	0	6.7	0	2.8	0	2.8	0	2.8	0	2.8
17	84.6	67.3	0	6.3	0	3.6	0	3.6	0	3.6	0	3.6
18	83.8	67.1	0	5.5	0	3.2	0	3.2	0	3.2	0	3.2
19	82.4	67.5	0	4.5	0	2.7	0	2.7	0	2.7	0	2.7
20	80.6	68.9	0	3.4	0	2.1	0	2.1	0	2.1	0	2.1
21	78.5	71.0	0	2.5	0	1.7	0	1.7	0	1.7	0	1.7
22	76.1	69.9	0	1.9	0	1.3	0	1.3	0	1.3	0	1.3
23	73.4	68.0	0	1.4	0	0.6	0	0.6	0	0.6	0	0.6
24	70.8	65.5	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0

June			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	3.0	0	1.1	0	1.4	0	1.4	0	1.4
2	72.6	68.4	0	2.5	0	0.6	0	0.7	0	0.7	0	0.7
3	70.9	67.3	0	2.1	0	0.1	0	0.2	0	0.2	0	0.2
4	69.6	66.5	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
5	68.7	65.8	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0
6	68.5	65.7	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0
7	69.0	66.3	0	2.0	0	0.0	0	0.0	0	0.0	0	0.0
8	70.6	66.9	0	2.8	0	0.0	0	0.0	0	0.0	0	0.0
9	73.0	67.7	0	3.8	0	0.0	0	0.0	0	0.0	0	0.0
10	76.1	68.1	0	4.9	0	1.2	0	1.2	0	1.2	0	1.2
11	79.5	69.1	0	6.0	0	3.2	0	3.3	0	3.3	0	3.3
12	82.9	70.1	0	7.1	0	4.0	0	4.0	0	4.0	0	4.0
13	86.0	71.0	0	7.9	0	4.7	0	4.7	0	4.7	0	4.7
14	88.4	72.5	0	8.6	0	5.6	0	5.6	0	5.6	0	5.6
15	90.0	74.0	0	8.6	0	6.3	0	6.3	0	6.3	0	6.3
16	90.5	73.7	0	8.6	0	6.3	0	6.3	0	6.3	0	6.3
17	90.3	74.2	0	8.6	0	6.3	0	6.3	0	6.3	0	6.3
18	89.4	73.9	0	7.8	0	6.0	0	6.0	0	6.0	0	6.0
19	88.1	74.5	0	6.5	0	5.4	0	5.4	0	5.4	0	5.4
20	86.4	75.3	0	5.3	0	4.5	0	4.5	0	4.5	0	4.5
21	84.3	76.5	0	4.6	0	4.2	0	4.2	0	4.2	0	4.2
22	81.9	75.7	0	4.1	0	3.7	0	3.7	0	3.7	0	3.7
23	79.5	74.0	0	3.7	0	3.0	0	3.0	0	3.0	0	3.0
24	77.0	72.1	0	3.2	0	2.2	0	2.2	0	2.2	0	2.2

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI- ZONE SYSTEMS

July			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	3.5	0	0.7	0	0.9	0	0.9	0	0.9
2	72.4	69.4	0	2.8	0	0.4	0	0.4	0	0.4	0	0.4
3	71.3	68.4	0	2.4	0	0.0	0	0.0	0	0.0	0	0.0
4	70.5	67.7	0	2.1	0	0.0	0	0.0	0	0.0	0	0.0
5	70.0	67.4	0	1.9	0	0.0	0	0.0	0	0.0	0	0.0
6	69.9	67.5	0	1.9	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	2.2	0	0.0	0	0.0	0	0.0	0	0.0
8	71.7	69.0	0	2.9	0	0.0	0	0.0	0	0.0	0	0.0
9	73.7	69.5	0	3.9	0	0.0	0	0.0	0	0.0	0	0.0
10	76.2	70.6	0	4.9	0	1.3	0	1.3	0	1.3	0	1.3
11	78.9	71.8	0	5.8	0	3.9	0	3.9	0	3.9	0	3.9
12	81.4	73.0	0	7.0	0	4.6	0	4.6	0	4.6	0	4.6
13	83.4	74.4	0	7.9	0	5.3	0	5.3	0	5.3	0	5.3
14	84.8	74.8	0	8.4	0	5.8	0	5.8	0	5.8	0	5.8
15	85.2	75.0	0	8.6	0	6.0	0	6.0	0	6.0	0	6.0
16	85.1	75.0	0	8.6	0	5.9	0	5.9	0	5.9	0	5.9
17	84.6	74.7	0	8.4	0	5.6	0	5.6	0	5.6	0	5.6
18	83.8	74.6	0	7.4	0	5.2	0	5.2	0	5.2	0	5.2
19	82.7	74.6	0	6.5	0	4.7	0	4.7	0	4.7	0	4.7
20	81.4	74.4	0	5.4	0	4.0	0	4.0	0	4.0	0	4.0
21	79.9	74.9	0	4.6	0	3.4	0	3.4	0	3.4	0	3.4
22	78.4	74.0	0	4.1	0	2.7	0	2.7	0	2.7	0	2.7
23	76.8	72.7	0	3.7	0	2.0	0	2.0	0	2.0	0	2.0
24	75.2	71.6	0	3.3	0	1.5	0	1.5	0	1.5	0	1.5

August			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	3.4	0	1.0	0	1.3	0	1.3	0	1.3
2	73.2	70.3	0	2.6	0	0.5	0	0.6	0	0.6	0	0.6
3	71.7	68.9	0	2.1	0	0.0	0	0.0	0	0.0	0	0.0
4	70.4	67.8	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
5	69.5	66.8	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0
6	68.9	66.4	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0
7	68.7	66.4	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
8	69.2	66.8	0	2.3	0	0.0	0	0.0	0	0.0	0	0.0
9	70.8	67.7	0	3.5	0	0.0	0	0.0	0	0.0	0	0.0
10	73.2	67.7	0	4.6	0	0.0	0	0.0	0	0.0	0	0.0
11	76.2	68.8	0	5.8	0	1.4	0	1.4	0	1.4	0	1.4
12	79.3	70.3	0	6.8	0	3.9	0	3.9	0	3.9	0	3.9
13	82.3	72.2	0	7.8	0	4.7	0	4.7	0	4.7	0	4.7
14	84.7	73.7	0	8.6	0	5.4	0	5.4	0	5.4	0	5.4
15	86.3	74.6	0	8.6	0	6.0	0	6.0	0	6.0	0	6.0
16	86.8	75.1	0	8.6	0	6.1	0	6.1	0	6.1	0	6.1
17	86.6	75.1	0	8.6	0	5.9	0	5.9	0	5.9	0	5.9
18	86.0	75.3	0	7.2	0	5.7	0	5.7	0	5.7	0	5.7
19	85.1	76.0	0	6.2	0	4.9	0	4.9	0	4.9	0	4.9
20	83.8	76.8	0	5.2	0	4.3	0	4.3	0	4.3	0	4.3
21	82.3	77.2	0	4.6	0	3.9	0	3.9	0	3.9	0	3.9
22	80.6	76.3	0	4.0	0	3.5	0	3.5	0	3.5	0	3.5
23	78.7	75.3	0	3.5	0	2.8	0	2.8	0	2.8	0	2.8
24	76.8	73.7	0	3.1	0	2.0	0	2.0	0	2.0	0	2.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI- ZONE SYSTEMS

September			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
2	67.6	65.0	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	2.6	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	3.7	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	4.8	0	0.2	0	0.2	0	0.2	0	0.2
13	78.3	66.7	0	5.8	0	0.4	0	0.5	0	0.5	0	0.5
14	81.2	68.4	0	6.5	0	0.7	0	0.7	0	0.7	0	0.7
15	83.0	70.0	0	6.8	0	0.8	0	0.8	0	0.8	0	0.8
16	83.7	70.5	0	6.7	0	3.7	0	3.7	0	3.7	0	3.7
17	83.4	70.5	0	6.0	0	3.8	0	3.8	0	3.8	0	3.8
18	82.8	70.9	0	5.0	0	3.4	0	3.4	0	3.4	0	3.4
19	81.6	72.7	0	4.0	0	2.7	0	2.7	0	2.7	0	2.7
20	80.1	74.7	0	3.3	0	2.4	0	2.4	0	2.4	0	2.4
21	78.3	74.1	0	2.7	0	2.0	0	2.0	0	2.0	0	2.0
22	76.3	72.4	0	2.1	0	1.4	0	1.4	0	1.4	0	1.4
23	74.1	70.7	0	1.5	0	0.7	0	0.7	0	0.7	0	0.7
24	71.8	68.9	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0

October			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-3,352	0.0	-26,528	0.0	-27,263	0.0	-27,287	0.0
2	50.1	48.6	0	0.0	-13,684	0.0	-32,464	0.0	-33,060	0.0	-33,079	0.0
3	48.4	46.9	0	0.0	-21,932	0.0	-37,141	0.0	-37,624	0.0	-37,639	0.0
4	47.1	45.8	0	0.0	-28,384	0.0	-40,701	0.0	-41,091	0.0	-41,104	0.0
5	46.3	44.8	-3,126	0.0	-32,996	0.0	-42,968	0.0	-43,284	0.0	-43,294	0.0
6	46.0	44.5	-6,584	0.0	-35,981	0.0	-44,052	0.0	-44,308	0.0	-44,316	0.0
7	46.8	45.3	-7,314	0.0	-35,930	0.0	-42,461	0.0	-42,668	0.0	-42,675	0.0
8	48.9	47.5	-5,150	0.0	-32,373	0.0	-37,659	0.0	-37,827	0.0	-37,832	0.0
9	52.2	49.9	0	0.0	-25,512	0.0	-29,790	0.0	-29,925	0.0	-29,930	0.0
10	56.2	52.5	0	0.0	-16,459	0.0	-19,918	0.0	-20,028	0.0	-20,031	0.0
11	60.4	54.4	0	0.0	-6,461	0.0	-9,256	0.0	-9,345	0.0	-9,348	0.0
12	64.4	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	67.7	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.0	-3,156	0.0	-4,541	0.0	-4,585	0.0	-4,586	0.0
23	57.0	55.1	0	0.0	-11,884	0.0	-13,006	0.0	-13,041	0.0	-13,042	0.0
24	54.5	52.7	0	0.0	-19,707	0.0	-20,615	0.0	-20,644	0.0	-20,645	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI- ZONE SYSTEMS

November			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-18,720	0.0	-17,998	0.0	-31,855	0.0	-32,122	0.0	-32,127	0.0
2	49.4	47.3	-23,361	0.0	-27,127	0.0	-38,348	0.0	-38,563	0.0	-38,568	0.0
3	47.2	45.3	-27,247	0.0	-34,576	0.0	-43,661	0.0	-43,835	0.0	-43,839	0.0
4	45.3	43.4	-30,205	0.0	-40,767	0.0	-48,122	0.0	-48,263	0.0	-48,266	0.0
5	43.9	42.2	-31,814	0.0	-45,297	0.0	-51,251	0.0	-51,365	0.0	-51,367	0.0
6	43.0	41.4	-31,143	0.0	-48,339	0.0	-53,159	0.0	-53,251	0.0	-53,253	0.0
7	42.7	41.2	-28,749	0.0	-49,772	0.0	-53,674	0.0	-53,749	0.0	-53,750	0.0
8	43.5	42.0	-23,619	0.0	-48,453	0.0	-51,612	0.0	-51,672	0.0	-51,673	0.0
9	45.9	44.0	-15,606	0.0	-43,055	0.0	-45,612	0.0	-45,661	0.0	-45,662	0.0
10	49.4	46.6	-5,756	0.0	-34,562	0.0	-36,630	0.0	-36,670	0.0	-36,670	0.0
11	53.8	48.6	0	0.0	-23,526	0.0	-25,199	0.0	-25,231	0.0	-25,232	0.0
12	58.4	50.6	0	0.0	-11,962	0.0	-13,313	0.0	-13,339	0.0	-13,340	0.0
13	62.8	52.6	0	0.0	-1,031	0.0	-2,123	0.0	-2,144	0.0	-2,144	0.0
14	66.3	54.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	68.7	55.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8	58.2	0	0.0	-706	0.0	-1,345	0.0	-1,357	0.0	-1,357	0.0
22	60.2	56.1	0	0.0	-9,088	0.0	-9,590	0.0	-9,599	0.0	-9,600	0.0
23	57.5	54.0	0	0.0	-17,085	0.0	-17,491	0.0	-17,499	0.0	-17,500	0.0
24	54.7	51.7	-1,599	0.0	-24,803	0.0	-25,131	0.0	-25,138	0.0	-25,138	0.0

December			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-32,851	0.0	-49,961	0.0	-50,962	0.0	-50,968	0.0	-50,968	0.0
2	43.2	41.1	-36,163	0.0	-54,117	0.0	-54,927	0.0	-54,932	0.0	-54,932	0.0
3	41.8	39.8	-38,796	0.0	-57,446	0.0	-58,102	0.0	-58,106	0.0	-58,106	0.0
4	40.7	38.7	-40,840	0.0	-59,989	0.0	-60,520	0.0	-60,523	0.0	-60,523	0.0
5	40.1	38.4	-42,143	0.0	-61,304	0.0	-61,733	0.0	-61,735	0.0	-61,735	0.0
6	39.9	38.4	-41,445	0.0	-61,659	0.0	-62,006	0.0	-62,008	0.0	-62,008	0.0
7	40.5	39.0	-39,532	0.0	-60,171	0.0	-60,451	0.0	-60,453	0.0	-60,453	0.0
8	42.2	40.7	-35,669	0.0	-56,171	0.0	-56,398	0.0	-56,400	0.0	-56,400	0.0
9	44.9	43.4	-29,778	0.0	-49,818	0.0	-50,001	0.0	-50,002	0.0	-50,002	0.0
10	48.2	45.8	-22,398	0.0	-41,871	0.0	-42,020	0.0	-42,020	0.0	-42,020	0.0
11	51.7	48.3	-12,951	0.0	-33,071	0.0	-33,191	0.0	-33,191	0.0	-33,191	0.0
12	55.0	50.7	-3,660	0.0	-24,446	0.0	-24,543	0.0	-24,544	0.0	-24,544	0.0
13	57.7	52.0	0	0.0	-17,228	0.0	-17,306	0.0	-17,307	0.0	-17,307	0.0
14	59.5	52.6	0	0.0	-12,288	0.0	-12,352	0.0	-12,352	0.0	-12,352	0.0
15	60.1	52.7	0	0.0	-10,376	0.0	-10,427	0.0	-10,427	0.0	-10,427	0.0
16	59.9	52.6	0	0.0	-10,590	0.0	-10,631	0.0	-10,632	0.0	-10,632	0.0
17	59.2	52.1	0	0.0	-12,327	0.0	-12,360	0.0	-12,360	0.0	-12,360	0.0
18	58.2	51.8	0	0.0	-15,244	0.0	-15,271	0.0	-15,271	0.0	-15,271	0.0
19	56.8	52.2	0	0.0	-19,545	0.0	-19,567	0.0	-19,567	0.0	-19,567	0.0
20	55.0	51.4	-4,869	0.0	-24,858	0.0	-24,876	0.0	-24,876	0.0	-24,876	0.0
21	53.1	50.1	-12,682	0.0	-30,203	0.0	-30,217	0.0	-30,217	0.0	-30,217	0.0
22	51.0	48.1	-19,381	0.0	-35,822	0.0	-35,833	0.0	-35,834	0.0	-35,834	0.0
23	48.9	46.2	-24,794	0.0	-41,216	0.0	-41,225	0.0	-41,225	0.0	-41,225	0.0
24	46.9	44.1	-28,975	0.0	-46,164	0.0	-46,171	0.0	-46,171	0.0	-46,171	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 25440 (1 BUILDING)

-----CARD 08-- Climatic Information --

Weather Code	Summer Clearness Number	Winter Clearness Number	Summer Design Dry Bulb	Summer Design Wet Bulb	Winter Design Dry Bulb	Building Orientation	Summer Ground Reflect	Winter Ground Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods--

1st Month Cooling Simulation	Last Month Cooling Simulation	Peak Cooling Load Hr	1st Month Summer Period	Last Month Summer Period	1st Month Daylight Savings	Last Month Daylight Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters----------------------------

Cooling Load Method	Heating Load Method	Ventilation Method	Airflow Input Units	Airflow Output Units	Room Circulation Rate	Put Wall RA Load to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

-------------------- Load Section Alternative #1 --------------------

---- Load Alternative ----

Number	Description
1	BRANCH EXCHANGE

-----CARD 20-- General Room Parameters ---

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
1	1	ALL ONE ROOM	7803		2	0		14			

```
-----CARD 21-- Thermostat Parameters -----------------------------------------------------------
         Cooling  Room    Cooling   Cooling  Heating  Heating   Heating   T'stat    Mass /  Carpet
Room     Room     Design  T'stat    T'stat   Room     T'stat    T'stat    Location  No. Hrs On
Number   Design OB RH     Driftpoint Schedule Design OB Driftpoint Schedule Flag     Average Floor
1                 50                 CLGCONST                     HTGCONST           LIGHT30 NO
```

```
-----CARD 22-- Roof Parameters -------------------------------------------------------
                 Roof
Room     Roof    Equal to Roof    Roof    Roof    Const Roof      Roof  Roof
Number   Number  Floor?   Length  Width   U-Value Type  Direction Tilt  Alpha
1        1       YES                      .05     195
```

```
-----CARD 24-- Wall Parameters -----------------------------------------------
                                         Wall                          Ground
Room     Wall    Wall    Wall    Wall    Constuc Wall      Wall  Wall  Reflectance
Number   Number  Length  Height  U-Value Type    Direction Tilt  Alpha Multiplier
1        1       102     10.5    .15     198     0
1        2       76.5    10.5    .15     198     90
1        3       102     10.5    .15     195     180
1        4       76.5    10.5    .15     198     270
```

```
-----CARD 25-- Wall/Glass Parameters --------------------------------------------------------------------
                                 Pct Glass                     External Internal Percent                 Inside
Room     Wall    Glass   Glass   or No. of Glass   Shading     Shading  Shading  Solar to Visible        Visible
Number   Number  Length  Width   Windows   U-Value Coefficient Type     Type     Ret. Air Transmittance  Reflectance
1        1       13      9.5     1         1.03    .94
1        4       5.5     9.5     1         1.03    .94
```

```
-----CARD 26-- Schedules -----------------------------------------------------------------------------
Room                                                  Reheat   Cooling Heating  Auxiliary Room    Daylighting
Number   People  Lights  Ventilation Infiltration Minimum  Fans    Fan      Fan       Exhaust Controls
1        FGHEAT  FGHEAT  YES         YES
```

```
-----CARD 27-- People and Lights --------------------------------------------------------------------
                                                        Lighting          Percent    --- Daylighting ----
Room     People  People  People   People  Lighting Lighting Fixture  Ballast Lights to Reference Reference
Number   Value   Units   Sensible Latent  Value    Units    Type     Factor  Ret. Air  Point 1   Point 2
1        62      PEOPLE  255      325     3.4      WATT-SF  ASHRAE2
```

-----CARD 28--- Miscellaneous Equipment ---

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	81.9	KW	FGHEAT						

-----CARD 29--- Room Airflows --

Room Number	--------------Ventilation-------------				--------------Infiltration------------				--Reheat Minimum--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----			
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.10	CFM-SF		

-----CARD 30- Fan Airflows ---

Room Number	---------------Main---------------				------------Auxiliary-----------				--Room Exhaust--	
	----Cooling----		----Heating----		----Cooling----		----Heating----			
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	1	CFM-SF	1	CFM-SF						

-------------------- System Section Alternative #1 ----------------------

-----CARD 39-- System Alternative -----

Number	Description
1	MULTI- ZONE SYSTEMS

-----CARD 40--- System Type --

System Set Number	System Type	------------OPTIONAL VENTILATION SYSTEM------------						Fan Static Pressure
		Ventil Deck Location	Cooling SADBVh	Heating SADBVh	Cooling Schedule	Heating Schedule		
1	MZ							

-----CARD 41-- Zone Assignment ---

System Set Number	Ref #1		Ref #2		Ref #3		Ref #4		Ref #5		Ref #6	
	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
1	1	1										

-----CARD 42--- Fan SP and Duct Parameters---

System Set Number	Cool Fan SP	Heat Fan SP	Return Fan SP	Mn Exh Fan SP	Aux Fan SP	Rm Exh Fan SP	Cool Fan Mtr Loc	Return Fan Mtr Loc	Supply Duct Ht Gn	Supply Duct Loc	Return Air Path
1											

-----CARD 48-- Cooling Capacity Overrides ---

System Set Number	People Variance	Lights Variance	Misc Loads Variance	MAIN COOLING				AUX COOLING	
				Capacity Value	Capacity Units	Capacity Sizing	Capacity Location	Capacity Value	Capacity Units
1			50						

Utility Description Reference Table

     Schedules:
          CLGCONST   SAMPLE COOLING TSTAT SCHEDULE
          FGHEAT   SCHD FOR HEAT LOAD CALCS
          HTGCONST   SAMPLE HEATING TSTAT SCHEDULE
          YES   AVAILABLE (100%)
     System:
          MZ   MULTIZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   0
 24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   0
 24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client: .
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
   0   100
  24

Utility Description Reference Table

    Schedules:
        CLGCONST SAMPLE COOLING TSTAT SCHEDULE
        FGHEAT SCHD FOR HEAT LOAD CALCS
        HTGCONST SAMPLE HEATING TSTAT SCHEDULE
        YES AVAILABLE (100%)
    System:
        FC FAN COIL
        SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Temperature
----   ------------
  0   75
 24

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Util Percent
----   ------------
   0   0
  24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Util Percent
----   ------------
   0   0
  24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Temperature
----   ------------
   0   72
  24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
   0   100
  24

```
********************************************************************
********************************************************************
**                                                              **
**             T R A C E   6 0 0   A N A L Y S I S              **
**                                                              **
**               by              **                             **
**                                                              **
********************************************************************
********************************************************************
```

```
ENERGY STUDY OF COOLING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORPS OF ENGINEERS
BON
BUILDING 25526 (1 BLDG)
```

Weather File Code:	AUGUSTA
Location:	FORT GORDON, GEORGIA
Latitude:	33.0 (deg)
Longitude:	82.0 (deg)
Time Zone:	5
Elevation:	143 (ft)
Barometric Pressure:	29.8 (in. Hg)

Summer Clearness Number:	0.90
Winter Clearness Number:	0.90
Summer Design Dry Bulb:	95 (F)
Summer Design Wet Bulb:	76 (F)
Winter Design Dry Bulb:	23 (F)
Summer Ground Relectance:	0.20
Winter Ground Relectance:	0.20

Air Density:	0.0756 (Lbm/cuft)
Air Specific Heat:	0.2444 (Btu/lbm/F)
Density-Specific Heat Prod:	1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor:	4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor:	4.5387 (Lb-min./hr/cuft)

```
Design Simulation Period: April    To October
System Simulation Period: January   To December
Cooling Load Methodology:    CLTD/CLF (Transfer Function Method)
```

```
Time/Date Program was Run:    8: 3: 4   8/17/94
Dataset Name:           FGTYPS42 .TM
```

System   1   Peak   SZ   - SINGLE ZONE

**************************** COOLING COIL PEAK ******************************** CLG SPACE PEAK ************ HEATING COIL PEAK ********

Peaked at Time ==)   Mo/Hr: 8/15   *   Mo/Hr: 9/15   *   Mo/Hr: 13/ 1
Outside Air ==)   OADB/WB/HR: 97/ 76/105.0   *   OADB: 94   *   OADB: 23

	Space Sens.+Lat. (Btuh)	Ret. Air Sensible (Btuh)	Ret. Air Latent (Btuh)	Net Total (Btuh)	Percent Of Tot (%)	*	Space Sensible (Btuh)	Percnt Of Tot (%)	*	Space Peak Space Sens (Btuh)	Coil Peak Tot Sens (Btuh)	Percnt Of Tot (%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	24,229	0		24,229	12.85	*	20,890	16.01	*	-13,296	-13,296	7.12
Glass Solar	55,296	0		55,296	29.32	*	72,576	55.62	*	0	0	0.00
Glass Cond	23,138	0		23,138	12.27	*	18,985	14.55	*	-58,379	-58,379	31.25
Wall Cond	8,819	0		8,819	4.68	*	6,063	4.65	*	-22,548	-22,548	12.07
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	26,321			26,321	13.96	*	11,970	9.17	*	-36,395	-36,395	19.49
Sub Total==)	137,802	0		137,802	73.08	*	130,484	100.00	*	-130,618	-130,618	69.93
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	50,774	26.92	*	0	0.00	*	0	-56,165	30.07
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==)	137,802	0	0	188,576	100.00	*	130,484	100.00	*	-130,618	-186,783	100.00

--COOLING COIL SELECTION--   --------------AREAS--------------

	Total Capacity (Tons)	(Mbh)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR Deg F	Deg F	Grains	Leaving DB/WB/HR Deg F	Deg F	Grains		Gross Total	Glass (sf)	(%)
Main Clg	15.7	188.6	152.4	9,600	77.5	66.1	78.2	62.7	60.0	73.7	Floor	9,600		
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0		
Totals	15.7	188.6									Roof	3,200	0	0
											Wall	7,290	1,152	16

------------HEATING COIL SELECTION------------   --------AIRFLOWS (cfm)--------   --ENGINEERING CHECKS--   --TEMPERATURES (F)---

	Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating					
Main Htg	-186.8	9,600	62.7	80.3	Vent	1,125	1,125	Clg % OA	11.7	Type	Clg	Htg
Aux Htg	0.0	0	0.0	0.0	Infil	583	729	Clg Cfm/Sqft	1.00	SADB	62.7	80.3
Preheat	-0.2	9,600	62.7	62.7	Supply	9,600	9,600	Clg Cfm/Ton	610.89	Plenum	75.0	68.0
Reheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Sqft/Ton	610.89	Return	75.0	68.0
Humidif	0.0	0	0.0	0.0	Return	9,600	9,600	Clg Btuh/Sqft	19.64	Ret/OA	77.5	62.7
Opt Vent	0.0	0	0.0	0.0	Exhaust	1,125	1,125	No. People	75	Runarnd	75.0	68.0
Total	-186.8				Rm Exh	0	0	Htg % OA	11.7	Fn MtrTD	0.0	0.0
					Auxil	0	0	Htg Cfm/Sqft	1.00	Fn BldTD	0.0	0.0
								Htg Btuh/Sqft	-19.46	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

January			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-152,600	0.0	-113,444	0.0	-113,444	0.0	-113,444	0.0	-113,444	0.0
2	32.9	30.7	-142,137	0.0	-114,645	0.0	-114,645	0.0	-114,645	0.0	-114,645	0.0
3	33.1	31.3	-134,671	0.0	-115,922	0.0	-115,922	0.0	-115,922	0.0	-115,922	0.0
4	33.9	32.1	-129,286	0.0	-114,041	0.0	-114,041	0.0	-114,041	0.0	-114,041	0.0
5	35.2	33.5	-112,820	0.0	-114,017	0.0	-114,017	0.0	-114,017	0.0	-114,017	0.0
6	37.0	35.4	-104,528	0.0	-112,136	0.0	-112,136	0.0	-112,136	0.0	-112,136	0.0
7	39.0	37.6	-103,196	0.0	-107,505	0.0	-107,505	0.0	-107,505	0.0	-107,505	0.0
8	41.3	40.1	-98,066	0.0	-102,231	0.0	-102,231	0.0	-102,231	0.0	-102,231	0.0
9	43.7	42.5	-75,465	0.0	-89,063	0.0	-89,063	0.0	-89,063	0.0	-89,063	0.0
10	46.1	44.0	-45,642	0.0	-74,567	0.0	-74,567	0.0	-74,567	0.0	-74,567	0.0
11	48.4	45.0	-13,432	0.0	-55,965	0.0	-55,965	0.0	-55,965	0.0	-55,965	0.0
12	50.5	45.6	0	0.0	-44,068	0.0	-44,068	0.0	-44,068	0.0	-44,068	0.0
13	52.2	46.1	0	0.0	-32,479	0.0	-32,479	0.0	-32,479	0.0	-32,479	0.0
14	53.5	46.4	0	0.0	-23,596	0.0	-23,596	0.0	-23,596	0.0	-23,596	0.0
15	54.3	46.3	0	0.0	-18,727	0.0	-18,727	0.0	-18,727	0.0	-18,727	0.0
16	54.6	46.1	0	1.7	-17,252	0.0	-17,252	0.0	-17,252	0.0	-17,252	0.0
17	54.0	45.9	0	2.8	-24,187	0.0	-24,187	0.0	-24,187	0.0	-24,187	0.0
18	52.5	45.0	0	0.2	-37,164	0.0	-37,164	0.0	-37,164	0.0	-37,164	0.0
19	50.1	44.8	0	0.0	-48,780	0.0	-48,780	0.0	-48,780	0.0	-48,780	0.0
20	47.1	43.3	0	0.0	-61,300	0.0	-61,300	0.0	-61,300	0.0	-61,300	0.0
21	43.7	40.4	0	0.0	-74,073	0.0	-74,073	0.0	-74,073	0.0	-74,073	0.0
22	40.4	37.3	0	0.0	-85,729	0.0	-85,729	0.0	-85,729	0.0	-85,729	0.0
23	37.3	34.9	-58,408	0.0	-96,006	0.0	-96,006	0.0	-96,006	0.0	-96,006	0.0
24	34.9	32.6	-74,563	0.0	-104,703	0.0	-104,703	0.0	-104,703	0.0	-104,703	0.0

February			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-77,928	0.0	-89,099	0.0	-89,099	0.0	-89,099	0.0	-89,099	0.0
2	39.7	37.1	-84,595	0.0	-95,588	0.0	-95,588	0.0	-95,588	0.0	-95,588	0.0
3	37.8	35.1	-90,666	0.0	-102,163	0.0	-102,163	0.0	-102,163	0.0	-102,163	0.0
4	36.3	33.8	-95,639	0.0	-106,584	0.0	-106,584	0.0	-106,584	0.0	-106,584	0.0
5	35.1	32.6	-97,782	0.0	-114,545	0.0	-114,545	0.0	-114,545	0.0	-114,545	0.0
6	34.4	32.0	-100,117	0.0	-115,571	0.0	-115,571	0.0	-115,571	0.0	-115,571	0.0
7	34.1	31.9	-99,021	0.0	-118,761	0.0	-118,761	0.0	-118,761	0.0	-118,761	0.0
8	34.6	32.4	-91,642	0.0	-116,976	0.0	-116,976	0.0	-116,976	0.0	-116,976	0.0
9	36.0	33.8	-70,534	0.0	-105,347	0.0	-105,347	0.0	-105,347	0.0	-105,347	0.0
10	38.2	34.7	-40,700	0.0	-92,404	0.0	-92,404	0.0	-92,404	0.0	-92,404	0.0
11	40.9	36.2	-12,151	0.0	-76,839	0.0	-76,839	0.0	-76,839	0.0	-76,839	0.0
12	43.9	37.4	0	0.0	-62,318	0.0	-62,318	0.0	-62,318	0.0	-62,318	0.0
13	46.9	39.4	0	0.0	-42,105	0.0	-42,105	0.0	-42,105	0.0	-42,105	0.0
14	49.7	41.4	0	0.0	-30,882	0.0	-30,882	0.0	-30,882	0.0	-30,882	0.0
15	51.8	42.8	0	0.0	-21,430	0.0	-21,430	0.0	-21,430	0.0	-21,430	0.0
16	53.2	43.9	0	0.7	-21,460	0.0	-21,460	0.0	-21,460	0.0	-21,460	0.0
17	53.7	44.2	0	2.7	-25,679	0.0	-25,679	0.0	-25,679	0.0	-25,679	0.0
18	53.4	44.4	0	0.8	-31,769	0.0	-31,769	0.0	-31,769	0.0	-31,769	0.0
19	52.7	44.4	0	0.0	-44,040	0.0	-44,040	0.0	-44,040	0.0	-44,040	0.0
20	51.5	45.2	0	0.0	-52,515	0.0	-52,515	0.0	-52,515	0.0	-52,515	0.0
21	50.0	44.6	0	0.0	-59,474	0.0	-59,474	0.0	-59,474	0.0	-59,474	0.0
22	48.1	43.3	0	0.0	-66,325	0.0	-66,325	0.0	-66,325	0.0	-66,325	0.0
23	46.1	41.8	-45,210	0.0	-73,979	0.0	-73,979	0.0	-73,979	0.0	-73,979	0.0
24	43.9	40.1	-70,375	0.0	-81,167	0.0	-81,167	0.0	-81,167	0.0	-81,167	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

March			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-36,910	0.0	0	0.0	-53,733	0.0	-53,733	0.0	-53,733	0.0
2	48.7	44.6	-43,906	0.0	-41,222	0.0	-63,304	0.0	-63,304	0.0	-63,304	0.0
3	46.6	42.9	-49,875	0.0	-69,298	0.0	-69,298	0.0	-69,298	0.0	-69,298	0.0
4	44.9	41.4	-55,007	0.0	-74,932	0.0	-74,932	0.0	-74,932	0.0	-74,932	0.0
5	43.9	40.8	-58,926	0.0	-79,031	0.0	-79,031	0.0	-79,031	0.0	-79,031	0.0
6	43.5	40.8	-58,903	0.0	-82,682	0.0	-82,682	0.0	-82,682	0.0	-82,682	0.0
7	44.0	41.4	-57,257	0.0	-81,861	0.0	-81,861	0.0	-81,861	0.0	-81,861	0.0
8	45.4	42.7	-45,512	0.0	-75,409	0.0	-75,409	0.0	-75,409	0.0	-75,409	0.0
9	47.7	44.3	-23,275	0.0	-64,412	0.0	-64,412	0.0	-64,412	0.0	-64,412	0.0
10	50.6	45.8	0	0.0	-47,787	0.0	-47,787	0.0	-47,787	0.0	-47,787	0.0
11	53.9	47.4	0	0.0	-26,059	0.0	-26,059	0.0	-26,059	0.0	-26,059	0.0
12	57.4	49.0	0	0.0	-5,141	0.0	-5,141	0.0	-5,141	0.0	-5,141	0.0
13	60.7	50.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	63.6	52.7	0	6.4	0	0.0	0	0.0	0	0.0	0	0.0
15	65.9	53.7	0	7.5	0	0.0	0	0.0	0	0.0	0	0.0
16	67.3	54.4	0	7.4	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	6.4	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	4.7	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	2.4	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.1	51.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.2	49.4	0	0.0	-30,093	0.0	-30,093	0.0	-30,093	0.0	-30,093	0.0

April			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	-1,059	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	-7,647	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	-13,281	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	-17,728	0.0	0	0.0	-8,845	0.0	-8,845	0.0	-8,845	0.0
5	54.2	51.4	-21,629	0.0	-22,104	0.0	-42,911	0.0	-42,911	0.0	-42,911	0.0
6	53.5	50.9	-21,423	0.0	-46,275	0.0	-46,276	0.0	-46,276	0.0	-46,276	0.0
7	53.2	51.1	-15,977	0.0	-46,887	0.0	-46,887	0.0	-46,887	0.0	-46,887	0.0
8	53.9	51.5	-1,064	0.0	-41,816	0.0	-41,816	0.0	-41,816	0.0	-41,816	0.0
9	55.9	52.1	0	0.0	-33,069	0.0	-33,069	0.0	-33,069	0.0	-33,069	0.0
10	58.9	53.2	-0	0.0	-14,812	0.0	-14,812	0.0	-14,812	0.0	-14,812	0.0
11	62.6	55.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	66.5	57.3	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	7.7	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	8.6	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	9.1	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	8.8	0	2.4	0	2.4	0	2.4	0	2.4
17	75.6	62.0	0	8.0	0	3.4	0	3.4	0	3.4	0	3.4
18	74.9	61.7	0	6.8	0	2.7	0	2.7	0	2.7	0	2.7
19	73.7	62.0	0	4.9	0	1.9	0	1.9	0	1.9	0	1.9
20	72.1	62.4	0	3.3	0	1.0	0	1.0	0	1.0	0	1.0
21	70.2	63.3	0	2.0	0	0.2	0	0.2	0	0.2	0	0.2
22	68.0	62.5	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
23	65.7	60.5	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

May Hour	OADB	OAWB	Design Htg Btuh	Clg Ton	Weekday Htg Btuh	Clg Ton	Saturday Htg Btuh	Clg Ton	Sunday Htg Btuh	Clg Ton	Monday Htg Btuh	Clg Ton
1	68.2	63.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	65.7	61.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	63.6	59.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	0.2	-1,778	0.0	-1,778	0.0	-1,778	0.0	-1,778	0.0
9	62.4	56.3	0	3.2	-8,485	0.0	-8,485	0.0	-8,485	0.0	-8,485	0.0
10	65.7	57.2	0	5.0	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	6.8	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	8.4	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	9.7	0	0.0	0	0.0	0	0.0	0	0.0
14	81.9	65.3	0	10.6	0	2.3	0	2.3	0	2.3	0	2.3
15	84.1	66.9	0	11.2	0	6.5	0	6.5	0	6.5	0	6.5
16	84.9	67.1	0	10.9	0	6.5	0	6.5	0	6.5	0	6.5
17	84.6	67.3	0	10.3	0	6.2	0	6.2	0	6.2	0	6.2
18	83.8	67.1	0	9.2	0	5.8	0	5.8	0	5.8	0	5.8
19	82.4	67.5	0	7.7	0	5.1	0	5.1	0	5.1	0	5.1
20	80.6	68.9	0	5.8	0	4.2	0	4.2	0	4.2	0	4.2
21	78.5	71.0	0	4.4	0	3.6	0	3.6	0	3.6	0	3.6
22	76.1	69.9	0	3.5	0	2.6	0	2.6	0	2.6	0	2.6
23	73.4	68.0	0	2.6	0	1.4	0	1.4	0	1.4	0	1.4
24	70.8	65.5	0	1.9	0	0.3	0	0.3	0	0.3	0	0.3

June Hour	OADB	OAWB	Design Htg Btuh	Clg Ton	Weekday Htg Btuh	Clg Ton	Saturday Htg Btuh	Clg Ton	Sunday Htg Btuh	Clg Ton	Monday Htg Btuh	Clg Ton
1	74.7	70.1	0	5.3	0	2.1	0	2.5	0	2.5	0	2.5
2	72.6	68.4	0	4.2	0	1.3	0	1.4	0	1.4	0	1.4
3	70.9	67.3	0	3.8	0	0.5	0	0.5	0	0.5	0	0.5
4	69.6	66.5	0	3.4	0	0.0	0	0.0	0	0.0	0	0.0
5	68.7	65.8	0	3.0	0	0.0	0	0.0	0	0.0	0	0.0
6	68.5	65.7	0	3.0	0	0.0	0	0.0	0	0.0	0	0.0
7	69.0	66.3	0	4.3	0	0.0	0	0.0	0	0.0	0	0.0
8	70.6	66.9	0	6.0	0	0.0	0	0.0	0	0.0	0	0.0
9	73.0	67.7	0	7.5	0	1.6	0	1.6	0	1.6	0	1.6
10	76.1	68.1	0	9.2	0	4.4	0	4.4	0	4.4	0	4.4
11	79.5	69.1	0	10.7	0	5.7	0	5.7	0	5.7	0	5.7
12	82.9	70.1	0	12.2	0	7.2	0	7.2	0	7.2	0	7.2
13	86.0	71.0	0	13.4	0	8.5	0	8.5	0	8.5	0	8.5
14	88.4	72.5	0	14.2	0	10.0	0	10.0	0	10.0	0	10.0
15	90.0	74.0	0	14.6	0	11.2	0	11.2	0	11.2	0	11.2
16	90.5	73.7	0	14.6	0	10.8	0	10.8	0	10.8	0	10.8
17	90.3	74.2	0	14.0	0	10.6	0	10.6	0	10.6	0	10.6
18	89.4	73.9	0	12.9	0	10.2	0	10.2	0	10.2	0	10.2
19	88.1	74.5	0	11.4	0	9.3	0	9.3	0	9.3	0	9.3
20	86.4	75.3	0	9.4	0	7.7	0	7.7	0	7.7	0	7.7
21	84.3	76.5	0	8.3	0	6.9	0	6.9	0	6.9	0	6.9
22	81.9	75.7	0	7.4	0	6.1	0	6.1	0	6.1	0	6.1
23	79.5	74.0	0	6.5	0	5.3	0	5.3	0	5.3	0	5.3
24	77.0	72.1	0	5.8	0	3.7	0	3.7	0	3.7	0	3.7

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

July			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	6.1	0	1.4	0	1.8	0	1.8	0	1.8
2	72.4	69.4	0	4.7	0	0.8	0	0.8	0	0.8	0	0.8
3	71.3	68.4	0	4.2	0	0.3	0	0.4	0	0.4	0	0.4
4	70.5	67.7	0	4.0	0	0.0	0	0.0	0	0.0	0	0.0
5	70.0	67.4	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
6	69.9	67.5	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	4.7	0	0.0	0	0.0	0	0.0	0	0.0
8	71.7	69.0	0	6.2	0	0.0	0	0.0	0	0.0	0	1.6
9	73.7	69.5	0	7.5	0	1.6	0	1.6	0	1.6	0	1.6
10	76.2	70.6	0	9.0	0	5.1	0	5.1	0	5.1	0	5.1
11	78.9	71.8	0	10.6	0	6.3	0	6.3	0	6.3	0	6.3
12	81.4	73.0	0	12.3	0	8.0	0	8.0	0	8.0	0	8.0
13	83.4	74.4	0	13.4	0	9.2	0	9.2	0	9.2	0	9.2
14	84.8	74.8	0	14.1	0	9.9	0	9.9	0	9.9	0	9.9
15	85.2	75.0	0	14.5	0	10.4	0	10.4	0	10.4	0	10.4
16	85.1	75.0	0	14.3	0	10.0	0	10.0	0	10.0	0	10.0
17	84.6	74.7	0	13.9	0	9.4	0	9.4	0	9.4	0	9.4
18	83.8	74.6	0	12.7	0	8.9	0	8.9	0	8.9	0	8.9
19	82.7	74.6	0	11.3	0	8.1	0	8.1	0	8.1	0	8.1
20	81.4	74.4	0	9.5	0	6.8	0	6.8	0	6.8	0	6.8
21	79.9	74.9	0	8.4	0	5.7	0	5.7	0	5.7	0	5.7
22	78.4	74.0	0	7.3	0	4.9	0	4.9	0	4.9	0	4.9
23	76.8	72.7	0	6.7	0	3.7	0	3.7	0	3.7	0	3.7
24	75.2	71.6	0	6.0	0	2.7	0	2.7	0	2.7	0	2.7

August			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	5.9	0	2.1	0	2.6	0	2.6	0	2.6
2	73.2	70.3	0	4.4	0	1.4	0	1.5	0	1.5	0	1.5
3	71.7	68.9	0	4.0	0	0.6	0	0.6	0	0.6	0	0.6
4	70.4	67.8	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
5	69.5	66.8	0	3.1	0	0.0	0	0.0	0	0.0	0	0.0
6	68.9	66.4	0	3.1	0	0.0	0	0.0	0	0.0	0	0.0
7	68.7	66.4	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
8	69.2	66.8	0	5.1	0	0.0	0	0.0	0	0.0	0	0.0
9	70.8	67.7	0	7.1	0	0.0	0	0.0	0	0.0	0	0.0
10	73.2	67.7	0	8.9	0	2.2	0	2.2	0	2.2	0	2.2
11	76.2	68.8	0	10.9	0	5.7	0	5.7	0	5.7	0	5.7
12	79.3	70.3	0	12.5	0	7.0	0	7.0	0	7.0	0	7.0
13	82.3	72.2	0	14.1	0	8.6	0	8.6	0	8.6	0	8.6
14	84.7	73.7	0	15.3	0	10.0	0	10.0	0	10.0	0	10.0
15	86.3	74.6	0	15.5	0	10.9	0	10.9	0	10.9	0	10.9
16	86.8	75.1	0	15.5	0	10.9	0	10.9	0	10.9	0	10.9
17	86.6	75.1	0	14.2	0	10.3	0	10.3	0	10.3	0	10.3
18	86.0	75.3	0	12.8	0	9.9	0	9.9	0	9.9	0	9.9
19	85.1	76.0	0	11.3	0	8.7	0	8.7	0	8.7	0	8.7
20	83.8	76.8	0	9.5	0	7.6	0	7.6	0	7.6	0	7.6
21	82.3	77.2	0	8.6	0	7.0	0	7.0	0	7.0	0	7.0
22	80.6	76.3	0	7.4	0	6.1	0	6.1	0	6.1	0	6.1
23	78.7	75.3	0	6.6	0	4.9	0	4.9	0	4.9	0	4.9
24	76.8	73.7	0	5.9	0	3.7	0	3.7	0	3.7	0	3.7

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

September			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	3.4	0	0.0	0	0.0	0	0.0	0	0.0
2	67.6	65.0	0	2.2	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	1.9	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	4.1	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	6.6	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	8.8	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	10.4	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	12.3	0	3.6	0	3.7	0	3.7	0	3.7
14	81.2	68.4	0	13.5	0	8.5	0	8.5	0	8.5	0	8.5
15	83.0	70.0	0	14.0	0	8.9	0	8.9	0	8.9	0	8.9
16	83.7	70.5	0	13.7	0	9.0	0	9.0	0	9.0	0	9.0
17	83.4	70.5	0	12.3	0	8.4	0	8.4	0	8.4	0	8.4
18	82.8	70.9	0	10.3	0	7.4	0	7.4	0	7.4	0	7.4
19	81.6	72.7	0	8.5	0	6.3	0	6.3	0	6.3	0	6.3
20	80.1	74.7	0	7.3	0	5.7	0	5.7	0	5.7	0	5.7
21	78.3	74.1	0	6.2	0	4.7	0	4.7	0	4.7	0	4.7
22	76.3	72.4	0	5.0	0	3.7	0	3.7	0	3.7	0	3.7
23	74.1	70.7	0	3.8	0	2.4	0	2.4	0	2.4	0	2.4
24	71.8	68.9	0	3.0	0	1.2	0	1.2	0	1.2	0	1.2

October			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	-2,973	0.0	-2,973	0.0	-2,973	0.0
2	50.1	48.6	0	0.0	0	0.0	-52,257	0.0	-52,257	0.0	-52,257	0.0
3	48.4	46.9	0	0.0	-49,043	0.0	-57,753	0.0	-57,753	0.0	-57,753	0.0
4	47.1	45.8	0	0.0	-63,348	0.0	-63,348	0.0	-63,348	0.0	-63,348	0.0
5	46.3	44.8	-48,038	0.0	-67,898	0.0	-67,898	0.0	-67,898	0.0	-67,898	0.0
6	46.0	44.5	-49,719	0.0	-72,367	0.0	-72,367	0.0	-72,367	0.0	-72,367	0.0
7	46.8	45.3	-47,882	0.0	-70,861	0.0	-70,861	0.0	-70,861	0.0	-70,861	0.0
8	48.9	47.5	-32,130	0.0	-62,342	0.0	-62,342	0.0	-62,342	0.0	-62,342	0.0
9	52.2	49.9	-5,889	0.0	-45,086	0.0	-45,086	0.0	-45,086	0.0	-45,086	0.0
10	56.2	52.5	0	0.0	-25,216	0.0	-25,216	0.0	-25,216	0.0	-25,216	0.0
11	60.4	54.4	0	0.0	-1,077	0.0	-1,077	0.0	-1,077	0.0	-1,077	0.0
12	64.4	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	67.7	57.3	0	5.4	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	8.6	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	9.1	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	8.6	0	0.2	0	0.2	0	0.2	0	0.2
17	69.5	57.3	0	7.3	0	2.2	0	2.2	0	2.2	0	2.2
18	68.2	57.7	0	5.0	0	0.9	0	0.9	0	0.9	0	0.9
19	66.5	60.6	0	3.0	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.5	52.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

November			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	0	0.0	0	0.0	-46,112	0.0	-46,112	0.0	-46,112	0.0
2	49.4	47.3	-44,329	0.0	-29,428	0.0	-55,901	0.0	-55,901	0.0	-55,901	0.0
3	47.2	45.3	-52,947	0.0	-64,198	0.0	-64,198	0.0	-64,198	0.0	-64,198	0.0
4	45.3	43.4	-58,439	0.0	-70,328	0.0	-70,328	0.0	-70,328	0.0	-70,328	0.0
5	43.9	42.2	-60,633	0.0	-75,077	0.0	-75,077	0.0	-75,077	0.0	-75,077	0.0
6	43.0	41.4	-62,430	0.0	-79,380	0.0	-79,380	0.0	-79,380	0.0	-79,380	0.0
7	42.7	41.2	-60,614	0.0	-82,298	0.0	-82,298	0.0	-82,298	0.0	-82,298	0.0
8	43.5	42.0	-50,425	0.0	-79,798	0.0	-79,798	0.0	-79,798	0.0	-79,798	0.0
9	45.9	44.0	-22,397	0.0	-64,594	0.0	-64,594	0.0	-64,594	0.0	-64,594	0.0
10	49.4	46.6	0	0.0	-44,710	0.0	-44,710	0.0	-44,710	0.0	-44,710	0.0
11	53.8	48.6	0	0.0	-23,501	0.0	-23,501	0.0	-23,501	0.0	-23,501	0.0
12	58.4	50.6	0	0.0	-3,342	0.0	-3,342	0.0	-3,342	0.0	-3,342	0.0
13	62.8	52.6	0	2.7	0	0.0	0	0.0	0	0.0	0	0.0
14	66.3	54.5	0	8.2	0	0.0	0	0.0	0	0.0	0	0.0
15	68.7	55.7	0	8.8	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	8.3	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	6.7	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	4.3	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	2.4	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2	56.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.5	54.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.7	51.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

December			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-55,154	0.0	-74,321	0.0	-74,321	0.0	-74,321	0.0	-74,321	0.0
2	43.2	41.1	-61,703	0.0	-80,745	0.0	-80,745	0.0	-80,745	0.0	-80,745	0.0
3	41.8	39.8	-67,582	0.0	-85,583	0.0	-85,583	0.0	-85,583	0.0	-85,583	0.0
4	40.7	38.7	-72,399	0.0	-90,058	0.0	-90,058	0.0	-90,058	0.0	-90,058	0.0
5	40.1	38.4	-76,307	0.0	-93,495	0.0	-93,495	0.0	-93,495	0.0	-93,495	0.0
6	39.9	38.4	-76,348	0.0	-96,377	0.0	-96,377	0.0	-96,377	0.0	-96,377	0.0
7	40.5	39.0	-75,166	0.0	-97,113	0.0	-97,113	0.0	-97,113	0.0	-97,113	0.0
8	42.2	40.7	-71,972	0.0	-94,606	0.0	-94,606	0.0	-94,606	0.0	-94,606	0.0
9	44.9	43.4	-48,540	0.0	-79,048	0.0	-79,048	0.0	-79,048	0.0	-79,048	0.0
10	48.2	45.8	-18,475	0.0	-59,589	0.0	-59,589	0.0	-59,589	0.0	-59,589	0.0
11	51.7	48.3	0	0.0	-38,063	0.0	-38,063	0.0	-38,063	0.0	-38,063	0.0
12	55.0	50.7	0	0.0	-19,921	0.0	-19,921	0.0	-19,921	0.0	-19,921	0.0
13	57.7	52.0	0	0.0	-4,454	0.0	-4,454	0.0	-4,454	0.0	-4,454	0.0
14	59.5	52.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	60.1	52.7	0	5.7	0	0.0	0	0.0	0	0.0	0	0.0
16	59.9	52.6	0	5.5	0	0.0	0	0.0	0	0.0	0	0.0
17	59.2	52.1	0	4.1	0	0.0	0	0.0	0	0.0	0	0.0
18	58.2	51.8	0	1.7	0	0.0	0	0.0	0	0.0	0	0.0
19	56.8	52.2	0	0.0	-25,977	0.0	-25,977	0.0	-25,977	0.0	-25,977	0.0
20	55.0	51.4	0	0.0	-36,025	0.0	-36,025	0.0	-36,025	0.0	-36,025	0.0
21	53.1	50.1	0	0.0	-43,128	0.0	-43,128	0.0	-43,128	0.0	-43,128	0.0
22	51.0	48.1	0	0.0	-51,744	0.0	-51,744	0.0	-51,744	0.0	-51,744	0.0
23	48.9	46.2	0	0.0	-59,922	0.0	-59,922	0.0	-59,922	0.0	-59,922	0.0
24	46.9	44.1	-10,257	0.0	-66,906	0.0	-66,906	0.0	-66,906	0.0	-66,906	0.0

01 Card - Job Information

Project: ENERGY STUDY OF COOLING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORPS OF ENGINEERS
Program User: BON
Comments: BUILDING 25526 (1 BLDG)

-----CARD 08-- Climatic Information --

Weather Code	Summer Clearness Number	Winter Clearness Number	Summer Design Dry Bulb	Summer Design Wet Bulb	Winter Design Dry Bulb	Building Orientation	Summer Ground Reflect	Winter Ground Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods---

1st Month Cooling Simulation	Last Month Cooling Simulation	Peak Cooling Load Hr	1st Month Summer Period	Last Month Summer Period	1st Month Daylight Savings	Last Month Daylight Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters----------------------------

Cooling Load Method	Heating Load Method	Ventilation Method	Airflow Input Units	Airflow Output Units	Room Circulation Rate	Put Wall RA Load to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	YES

--------------------- Load Section Alternative #1 ---------------------

---- Load Alternative ----

Number	Description
1	REGIMENTAL BRIGADE H.Q.

-----CARD 20-- General Room Parameters --

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
1	1	BLOCK	3200		3	0		10.5	3		

-----CARD 21-- Thermostat Parameters ---

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters ---

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				182			

-----CARD 24-- Wall Parameters ---

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	40.7	10		181	270			
1	2	80.8	10		181	0			
1	3	40.7	10		181	90			
1	4	80.8	10		181	180			

-----CARD 25-- Wall/Glass Parameters --

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	3.5	10	1	1.03	.87					
1	2	12.8	10	1	1.03	.87					
1	3	3.5	10	1	1.03	.87					
1	4	18.6	10	1	1.03	.87					

-----CARD 26-- Schedules --

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights --

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	Daylighting Reference Point 1	Daylighting Reference Point 2
1	25	PEOPLE	255	325	2.20	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment ---

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	P.C.	9.9	KW	FGHEAT						
1	2	PRINTERS	1.1	KW	FGHEAT						
1	3	OTHER	4.1	KW	FGHEAT						

-----CARD 29--- Room Airflows ---

| | ---------------Ventilation------------- | | | | --------------Infiltration------------ | | | | --Reheat Minimum-- | |
Room Number	-----Cooling----- Value	Units	-----Heating----- Value	Units	-----Cooling----- Value	Units	-----Heating----- Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows ---

| | --------------Main-------------- | | | | -------------Auxiliary------------ | | | | --Room Exhaust-- | |
Room Number	----Cooling---- Value	Units	----Heating---- Value	Units	----Cooling---- Value	Units	----Heating---- Value	Units	Value	Units
1	1	CFM-SF	1	CFM-SF						

-------------------- System Section Alternative #1 --------------------

-----CARD 40--- System Type ---

-----------OPTIONAL VENTILATION SYSTEM-----------

System Set Number	System Type	Ventil Deck Location	Cooling SADBVh	Heating SADBVh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	SZ						

-----CARD 41-- Zone Assignment --

System Set Number	Ref #1 Begin	End	Ref #2 Begin	End	Ref #3 Begin	End	Ref #4 Begin	End	Ref #5 Begin	End	Ref #6 Begin	End
1	1	1										

-----CARD 42--- Fan SP and Duct Parameters--

System Set Number	Cool Fan SP	Heat Fan SP	Return Fan SP	Mn Exh Fan SP	Aux Fan SP	Rm Exh Fan SP	Cool Fan Mtr Loc	Return Fan Mtr Loc	Supply Duct Ht Gn	Supply Duct Loc	Return Air Path
1											

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-----CARD 48-- Cooling Capacity Overrides -----------------------------------------------------------
System                    Misc      -------------MAIN  COOLING------------  ---AUX COOLING----
Set     People   Lights   Loads     Capacity Capacity Capacity Capacity Capacity Capacity
Number  Variance Variance Variance  Value    Units    Sizing   Location Value    Units
1                         85
```

Utility Description Reference Table

      Schedules:
           CLGCONST SAMPLE COOLING TSTAT SCHEDULE
           FGHEAT   SCHD FOR HEAT LOAD CALCS
           HTGCONST SAMPLE HEATING TSTAT SCHEDULE
           YES   AVAILABLE (100%)
      System:
           SZ   SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Temperature
----   ------------
  0   75
 24

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   0
 24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   0
 24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Temperature
----   ------------
   0   72
  24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   100
 24

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*****************************************************************
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**                                                           **
**           T R A C E   6 0 0   A N A L Y S I S             **
**                                                           **
**              by              **                           **
**                                                           **
*****************************************************************
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ENERGY STUDY OF COOLING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORPS OF ENGINEERS
BON
BUILDING 28414, CHAPEL

Weather File Code:	AUGUSTA
Location:	FORT GORDON, GEORGIA
Latitude:	33.0 (deg)
Longitude:	82.0 (deg)
Time Zone:	5
Elevation:	143 (ft)
Barometric Pressure:	29.8 (in. Hg)

Summer Clearness Number:	0.90
Winter Clearness Number:	0.90
Summer Design Dry Bulb:	95 (F)
Summer Design Wet Bulb:	76 (F)
Winter Design Dry Bulb:	23 (F)
Summer Ground Relectance:	0.20
Winter Ground Relectance:	0.20

Air Density:	0.0756	(Lbm/cuft)
Air Specific Heat:	0.2444	(Btu/lbm/F)
Density-Specific Heat Prod:	1.1094	(Btu-min./hr/cuft/F)
Latent Heat Factor:	4,883.6	(Btu-min./hr/cuft)
Enthalpy Factor:	4.5387	(Lb-min./hr/cuft)

Design Simulation Period: April   To October
System Simulation Period: January   To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 8:22:43   8/17/94
Dataset Name: FGTYPS43 .TM

System   1   Block   VAV   -   VARIABLE AIR VOLUME

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**************************** COOLING COIL PEAK ************************************ CLG SPACE PEAK ************ HEATING COIL PEAK ********
Peaked at Time ==)          Mo/Hr:  8/15                  *      Mo/Hr:  6/15      *         Mo/Hr: 13/ 1
Outside Air ==)      OADB/WB/HR:  97/ 76/105.0            *      OADB: 100         *         OADB:  23
                                                         *                        *
```

	Space Sens.+Lat. (Btuh)	Ret. Air Sensible (Btuh)	Ret. Air Latent (Btuh)	Net Total (Btuh)	Percnt Of Tot (%)	*	Space Sensible (Btuh)	Percnt Of Tot (%)	*	Space Peak Space Sens (Btuh)	Coil Peak Tot Sens (Btuh)	Percnt Of Tot (%)
Envelope Loads						*			*			
Skylite Solr	28,176	0		28,176	8.63	*	30,363	25.41	*	0	0	0.00
Skylite Cond	0	2,098		2,098	0.64	*	0	0.00	*	0	-5,593	3.90
Roof Cond	0	32,490		32,490	9.95	*	0	0.00	*	0	-19,939	13.90
Glass Solar	22,626	0		22,626	6.93	*	22,626	18.94	*	0	0	0.00
Glass Cond	19,730	0		19,730	6.04	*	23,121	19.35	*	-50,866	-50,866	35.46
Wall Cond	14,525	4,299		18,824	5.76	*	15,714	13.15	*	-26,386	-33,025	23.02
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	28,173			28,173	8.63	*	15,359	12.86	*	-34,013	-34,013	23.71
Sub Total==)	113,230	38,888		152,118	46.58	*	107,183	89.71	*	-111,265	-143,436	100.00
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	7,590	-7,590		0	0.00	*	12,290	10.29	*	-29,447	0	0.00
Outside Air	0	0	0	186,081	56.97	*	0	0.00	*	0	0	0.00
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		-11,591	0	-11,591	-3.55	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==)	120,820	19,707	0	326,607	100.00	*	119,472	100.00	*	-140,713	-143,436	100.00

-----------------------------------COOLING COIL SELECTION--   --------------AREAS-------------

	Total Capacity (Tons)	(Mbh)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR Deg F	Deg F	Grains	Leaving DB/WB/HR Deg F	Deg F	Grains		Gross Total	Glass (sf)	(%)
Main Clg	27.2	326.6	211.7	4,960	91.5	73.1	94.1	55.8	53.3	57.2	Floor	8,254		
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0		
Totals	27.2	326.6									Roof	8,919	243	3
											Wall	7,570	943	12

------------HEATING COIL SELECTION-------------   --------AIRFLOWS (cfm)--------   --ENGINEERING CHECKS--   --TEMPERATURES (F)---

	Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating			Type	Clg	Htg
Main Htg	-143.4	0	0.0	0.0	Vent	3,600	0	Clg % OA	64.2	SADB	55.8	68.1
Aux Htg	0.0	0	0.0	0.0	Infil	545	681	Clg Cfm/Sqft	0.68	Plenum	77.9	59.2
Preheat	-131.0	3,600	23.0	55.8	Supply	5,606	0	Clg Cfm/Ton	205.97	Return	77.9	64.5
Reheat	-0.0	0	0.0	0.0	Mincfm	0	0	Clg Sqft/Ton	303.26	Ret/OA	91.5	23.0
Humidif	0.0	0	0.0	0.0	Return	5,606	0	Clg Btuh/Sqft	39.57	Runarnd	75.0	68.0
Opt Vent	0.0	0	0.0	0.0	Exhaust	3,600	0	No. People	240	Fn MtrTD	0.0	0.0
Total	-274.4				Rm Exh	0	0	Htg % OA	0.0	Fn BldTD	0.0	0.0
					Auxil	0	0	Htg Cfm/SqFt	0.00	Fn Frict	0.0	0.0
								Htg Btuh/SqFt	-33.24			
```

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

| January | | | ------ Design ----- | | ----- Weekday ----- | | ----- Saturday---- | | ------ Sunday ----- | | ------ Monday ----- | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hour | OADB | OAWB | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton |
| 1 | 33.4 | 31.1 | -117,768 | 0.0 | -63,177 | 0.0 | -64,000 | 0.0 | -64,481 | 0.0 | -64,762 | 0.0 |
| 2 | 32.9 | 30.7 | -117,768 | 0.0 | -64,522 | 0.0 | -65,327 | 0.0 | -65,798 | 0.0 | -66,073 | 0.0 |
| 3 | 33.1 | 31.3 | -117,768 | 0.0 | -65,709 | 0.0 | -66,497 | 0.0 | -66,957 | 0.0 | -67,226 | 0.0 |
| 4 | 33.9 | 32.1 | -117,768 | 0.0 | -65,185 | 0.0 | -65,954 | 0.0 | -66,405 | 0.0 | -66,667 | 0.0 |
| 5 | 35.2 | 33.5 | -111,437 | 0.0 | -66,653 | 0.0 | -67,406 | 0.0 | -67,846 | 0.0 | -68,104 | 0.0 |
| 6 | 37.0 | 35.4 | -65,764 | 0.0 | -67,010 | 0.0 | -67,747 | 0.0 | -68,178 | 0.0 | -68,429 | 0.0 |
| 7 | 39.0 | 37.6 | -65,544 | 0.0 | -65,289 | 0.0 | -66,010 | 0.0 | -66,431 | 0.0 | -66,677 | 0.0 |
| 8 | 41.3 | 40.1 | -64,838 | 0.0 | -64,830 | 0.0 | -65,535 | 0.0 | -65,947 | 0.0 | -66,187 | 0.0 |
| 9 | 43.7 | 42.5 | -50,971 | 0.0 | -56,545 | 0.0 | -57,234 | 0.0 | -57,637 | 0.0 | -57,873 | 0.0 |
| 10 | 46.1 | 44.0 | -36,910 | 0.0 | -51,817 | 0.0 | -52,491 | 0.0 | -52,884 | 0.0 | -53,115 | 0.0 |
| 11 | 48.4 | 45.0 | -26,164 | 0.0 | -46,574 | 0.0 | -47,233 | 0.0 | -47,619 | 0.0 | -47,844 | 0.0 |
| 12 | 50.5 | 45.6 | -18,486 | 0.0 | -42,670 | 0.0 | -43,314 | 0.0 | -43,690 | 0.0 | -43,911 | 0.0 |
| 13 | 52.2 | 46.1 | -13,230 | 0.0 | -40,074 | 0.0 | -40,704 | 0.0 | -41,072 | 0.0 | -41,288 | 0.0 |
| 14 | 53.5 | 46.4 | -7,696 | 0.0 | -35,452 | 0.0 | -36,069 | 0.0 | -36,428 | 0.0 | -36,639 | 0.0 |
| 15 | 54.3 | 46.3 | -3,530 | 0.0 | -33,472 | 0.0 | -34,074 | 0.0 | -34,426 | 0.0 | -34,631 | 0.0 |
| 16 | 54.6 | 46.1 | -3,762 | 0.0 | -31,785 | 0.0 | -32,373 | 0.0 | -32,717 | 0.0 | -32,918 | 0.0 |
| 17 | 54.0 | 45.9 | -6,416 | 0.0 | -33,014 | 0.0 | -33,589 | 0.0 | -33,926 | 0.0 | -34,122 | 0.0 |
| 18 | 52.5 | 45.0 | -12,022 | 0.0 | -34,164 | 0.0 | -34,727 | 0.0 | -35,056 | 0.0 | -35,248 | 0.0 |
| 19 | 50.1 | 44.8 | -19,402 | 0.0 | -35,876 | 0.0 | -36,425 | 0.0 | -36,747 | 0.0 | -36,934 | 0.0 |
| 20 | 47.1 | 43.3 | -25,767 | 0.0 | -39,855 | 0.0 | -40,393 | 0.0 | -40,707 | 0.0 | -40,891 | 0.0 |
| 21 | 43.7 | 40.4 | -32,656 | 0.0 | -44,943 | 0.0 | -45,468 | 0.0 | -45,776 | 0.0 | -45,955 | 0.0 |
| 22 | 40.4 | 37.3 | -37,929 | 0.0 | -50,669 | 0.0 | -51,184 | 0.0 | -51,484 | 0.0 | -51,660 | 0.0 |
| 23 | 37.3 | 34.9 | -43,993 | 0.0 | -54,984 | 0.0 | -55,488 | 0.0 | -55,782 | 0.0 | -55,953 | 0.0 |
| 24 | 34.9 | 32.6 | -47,958 | 0.0 | -60,173 | 0.0 | -60,665 | 0.0 | -60,953 | 0.0 | -61,120 | 0.0 |

| February | | | ------ Design ----- | | ----- Weekday ----- | | ----- Saturday---- | | ------ Sunday ----- | | ------ Monday ----- | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hour | OADB | OAWB | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton |
| 1 | 41.7 | 38.6 | -49,452 | 0.0 | -50,602 | 0.0 | -51,073 | 0.0 | -51,347 | 0.0 | -51,506 | 0.0 |
| 2 | 39.7 | 37.1 | -53,273 | 0.0 | -55,006 | 0.0 | -55,467 | 0.0 | -55,735 | 0.0 | -55,891 | 0.0 |
| 3 | 37.8 | 35.1 | -56,448 | 0.0 | -58,322 | 0.0 | -58,773 | 0.0 | -59,035 | 0.0 | -59,188 | 0.0 |
| 4 | 36.3 | 33.8 | -59,518 | 0.0 | -59,974 | 0.0 | -60,415 | 0.0 | -60,671 | 0.0 | -60,820 | 0.0 |
| 5 | 35.1 | 32.6 | -62,174 | 0.0 | -64,041 | 0.0 | -64,472 | 0.0 | -64,723 | 0.0 | -64,869 | 0.0 |
| 6 | 34.4 | 32.0 | -62,755 | 0.0 | -65,572 | 0.0 | -65,994 | 0.0 | -66,239 | 0.0 | -66,382 | 0.0 |
| 7 | 34.1 | 31.9 | -62,893 | 0.0 | -68,436 | 0.0 | -68,848 | 0.0 | -69,088 | 0.0 | -69,227 | 0.0 |
| 8 | 34.6 | 32.4 | -58,587 | 0.0 | -66,995 | 0.0 | -67,397 | 0.0 | -67,633 | 0.0 | -67,768 | 0.0 |
| 9 | 36.0 | 33.8 | -43,167 | 0.0 | -59,457 | 0.0 | -59,852 | 0.0 | -60,081 | 0.0 | -60,215 | 0.0 |
| 10 | 38.2 | 34.7 | -29,998 | 0.0 | -56,473 | 0.0 | -56,858 | 0.0 | -57,083 | 0.0 | -57,213 | 0.0 |
| 11 | 40.9 | 36.2 | -21,250 | 0.0 | -53,413 | 0.0 | -53,790 | 0.0 | -54,009 | 0.0 | -54,137 | 0.0 |
| 12 | 43.9 | 37.4 | -12,504 | 0.0 | -49,951 | 0.0 | -50,319 | 0.0 | -50,533 | 0.0 | -50,658 | 0.0 |
| 13 | 46.9 | 39.4 | -7,368 | 0.0 | -44,059 | 0.0 | -44,419 | 0.0 | -44,628 | 0.0 | -44,750 | 0.0 |
| 14 | 49.7 | 41.4 | -2,170 | 0.0 | -39,775 | 0.0 | -40,128 | 0.0 | -40,332 | 0.0 | -40,451 | 0.0 |
| 15 | 51.8 | 42.8 | 0 | 0.0 | -35,508 | 0.0 | -35,851 | 0.0 | -36,051 | 0.0 | -36,168 | 0.0 |
| 16 | 53.2 | 43.9 | 0 | 0.0 | -34,678 | 0.0 | -35,015 | 0.0 | -35,210 | 0.0 | -35,324 | 0.0 |
| 17 | 53.7 | 44.2 | 0 | 0.0 | -33,176 | 0.0 | -33,505 | 0.0 | -33,695 | 0.0 | -33,806 | 0.0 |
| 18 | 53.4 | 44.4 | -6,507 | 0.0 | -34,034 | 0.0 | -34,354 | 0.0 | -34,541 | 0.0 | -34,650 | 0.0 |
| 19 | 52.7 | 44.4 | -14,546 | 0.0 | -34,506 | 0.0 | -34,820 | 0.0 | -35,003 | 0.0 | -35,109 | 0.0 |
| 20 | 51.5 | 45.2 | -21,656 | 0.0 | -37,676 | 0.0 | -37,982 | 0.0 | -38,161 | 0.0 | -38,264 | 0.0 |
| 21 | 50.0 | 44.6 | -27,857 | 0.0 | -39,287 | 0.0 | -39,587 | 0.0 | -39,762 | 0.0 | -39,864 | 0.0 |
| 22 | 48.1 | 43.3 | -33,284 | 0.0 | -42,676 | 0.0 | -42,970 | 0.0 | -43,140 | 0.0 | -43,240 | 0.0 |
| 23 | 46.1 | 41.8 | -39,614 | 0.0 | -45,263 | 0.0 | -45,550 | 0.0 | -45,717 | 0.0 | -45,813 | 0.0 |
| 24 | 43.9 | 40.1 | -43,575 | 0.0 | -48,059 | 0.0 | -48,339 | 0.0 | -48,503 | 0.0 | -48,598 | 0.0 |

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

| March Hour | OADB | OAWB | Design Htg Btuh | Design Clg Ton | Weekday Htg Btuh | Weekday Clg Ton | Saturday Htg Btuh | Saturday Clg Ton | Sunday Htg Btuh | Sunday Clg Ton | Monday Htg Btuh | Monday Clg Ton |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 51.3 | 46.8 | -19,246 | 0.0 | 0 | 0.0 | -24,181 | 0.0 | -24,098 | 0.0 | -24,049 | 0.0 |
| 2 | 48.7 | 44.6 | -23,306 | 0.0 | 0 | 0.0 | -29,042 | 0.0 | -28,960 | 0.0 | -28,913 | 0.0 |
| 3 | 46.6 | 42.9 | -26,730 | 0.0 | 0 | 0.0 | -33,190 | 0.0 | -33,110 | 0.0 | -33,064 | 0.0 |
| 4 | 44.9 | 41.4 | -30,114 | 0.0 | 0 | 0.0 | -36,205 | 0.0 | -36,126 | 0.0 | -36,081 | 0.0 |
| 5 | 43.9 | 40.8 | -33,039 | 0.0 | 0 | 0.0 | -38,775 | 0.0 | -38,699 | 0.0 | -38,654 | 0.0 |
| 6 | 43.5 | 40.8 | -35,004 | 0.0 | -27,002 | 0.0 | -41,507 | 0.0 | -41,431 | 0.0 | -41,388 | 0.0 |
| 7 | 44.0 | 41.4 | -35,004 | 0.0 | -41,755 | 0.0 | -41,629 | 0.0 | -41,556 | 0.0 | -41,513 | 0.0 |
| 8 | 45.4 | 42.7 | -20,875 | 0.0 | -35,280 | 0.0 | -35,158 | 0.0 | -35,087 | 0.0 | -35,045 | 0.0 |
| 9 | 47.7 | 44.3 | -6,747 | 0.0 | -29,812 | 0.0 | -29,692 | 0.0 | -29,622 | 0.0 | -29,581 | 0.0 |
| 10 | 50.6 | 45.8 | 0 | 0.0 | -23,621 | 0.0 | -23,505 | 0.0 | -23,436 | 0.0 | -23,396 | 0.0 |
| 11 | 53.9 | 47.4 | 0 | 0.0 | -16,522 | 0.0 | -16,407 | 0.0 | -16,340 | 0.0 | -16,302 | 0.0 |
| 12 | 57.4 | 49.0 | 0 | 0.0 | -11,439 | 0.0 | -11,326 | 0.0 | -11,262 | 0.0 | -11,223 | 0.0 |
| 13 | 60.7 | 50.8 | 0 | 0.0 | -6,836 | 0.0 | -6,726 | 0.0 | -6,662 | 0.0 | -6,625 | 0.0 |
| 14 | 63.6 | 52.7 | 0 | 0.0 | -1,578 | 0.0 | -1,471 | 0.0 | -1,408 | 0.0 | -1,371 | 0.0 |
| 15 | 65.9 | 53.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 16 | 67.3 | 54.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 17 | 67.8 | 54.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 18 | 67.4 | 54.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 19 | 66.4 | 55.2 | 0 | 0.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 20 | 64.7 | 56.0 | 0 | 0.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 21 | 62.5 | 56.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 22 | 60.0 | 54.1 | 0 | 0.0 | -2,167 | 0.0 | -1,478 | 0.0 | -1,077 | 0.0 | -842 | 0.0 |
| 23 | 57.1 | 51.9 | 0 | 0.0 | -15,021 | 0.0 | -14,933 | 0.0 | -14,882 | 0.0 | -14,853 | 0.0 |
| 24 | 54.2 | 49.4 | 0 | 0.0 | -20,951 | 0.0 | -20,866 | 0.0 | -20,817 | 0.0 | -20,787 | 0.0 |

| April Hour | OADB | OAWB | Design Htg Btuh | Design Clg Ton | Weekday Htg Btuh | Weekday Clg Ton | Saturday Htg Btuh | Saturday Clg Ton | Sunday Htg Btuh | Sunday Clg Ton | Monday Htg Btuh | Monday Clg Ton |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 61.0 | 56.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 2 | 58.9 | 54.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 3 | 57.0 | 53.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 4 | 55.4 | 52.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 5 | 54.2 | 51.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 6 | 53.5 | 50.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 7 | 53.2 | 51.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 8 | 53.9 | 51.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 9 | 55.9 | 52.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 10 | 58.9 | 53.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 11 | 62.6 | 55.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 12 | 66.5 | 57.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 13 | 70.2 | 59.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 14 | 73.2 | 61.0 | 0 | 5.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 15 | 75.2 | 62.2 | 0 | 7.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 16 | 75.9 | 62.2 | 0 | 7.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 17 | 75.6 | 62.0 | 0 | 6.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 18 | 74.9 | 61.7 | 0 | 5.1 | 0 | 1.5 | 0 | 1.6 | 0 | 1.8 | 0 | 1.9 |
| 19 | 73.7 | 62.0 | 0 | 3.8 | 0 | 1.6 | 0 | 1.6 | 0 | 1.7 | 0 | 1.7 |
| 20 | 72.1 | 62.4 | 0 | 2.7 | 0 | 1.3 | 0 | 1.3 | 0 | 1.3 | 0 | 1.3 |
| 21 | 70.2 | 63.3 | 0 | 1.9 | 0 | 1.1 | 0 | 1.1 | 0 | 1.1 | 0 | 1.1 |
| 22 | 68.0 | 62.5 | 0 | 1.3 | 0 | 0.5 | 0 | 0.5 | 0 | 0.5 | 0 | 0.5 |
| 23 | 65.7 | 60.5 | 0 | 0.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 24 | 63.4 | 58.5 | 0 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

| May | | | ------ Design ----- | | ----- Weekday ----- | | ----- Saturday---- | | ------ Sunday ----- | | ------ Monday ----- | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hour | OADB | OAWB | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton |
| 1 | 68.2 | 63.5 | 0 | 1.8 | 0 | 1.2 | 0 | 1.2 | 0 | 1.2 | 0 | 1.2 |
| 2 | 65.7 | 61.5 | 0 | 1.6 | 0 | 0.5 | 0 | 0.5 | 0 | 0.5 | 0 | 0.5 |
| 3 | 63.6 | 59.7 | 0 | 1.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 4 | 61.8 | 58.4 | 0 | 0.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 5 | 60.5 | 57.1 | 0 | 0.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 6 | 59.7 | 56.5 | 0 | 0.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 7 | 59.4 | 56.5 | 0 | 1.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 8 | 60.1 | 56.3 | 0 | 2.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 9 | 62.4 | 56.3 | 0 | 4.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 10 | 65.7 | 57.2 | 0 | 5.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 11 | 69.9 | 58.9 | 0 | 7.7 | 0 | 0.6 | 0 | 0.6 | 0 | 0.6 | 0 | 0.6 |
| 12 | 74.3 | 60.9 | 0 | 9.7 | 0 | 2.0 | 0 | 2.0 | 0 | 2.0 | 0 | 2.0 |
| 13 | 78.5 | 63.7 | 0 | 12.4 | 0 | 3.6 | 0 | 3.6 | 0 | 3.6 | 0 | 3.6 |
| 14 | 81.9 | 65.3 | 0 | 12.8 | 0 | 5.6 | 0 | 5.6 | 0 | 5.6 | 0 | 5.6 |
| 15 | 84.1 | 66.9 | 0 | 15.4 | 0 | 6.5 | 0 | 6.5 | 0 | 6.5 | 0 | 6.5 |
| 16 | 84.9 | 67.1 | 0 | 15.2 | 0 | 7.2 | 0 | 7.1 | 0 | 7.1 | 0 | 7.1 |
| 17 | 84.6 | 67.3 | 0 | 14.2 | 0 | 7.8 | 0 | 7.7 | 0 | 7.7 | 0 | 7.7 |
| 18 | 83.8 | 67.1 | 0 | 11.7 | 0 | 7.9 | 0 | 7.9 | 0 | 7.9 | 0 | 7.9 |
| 19 | 82.4 | 67.5 | 0 | 9.5 | 0 | 6.8 | 0 | 6.8 | 0 | 6.8 | 0 | 6.8 |
| 20 | 80.6 | 68.9 | 0 | 7.8 | 0 | 6.6 | 0 | 6.6 | 0 | 6.6 | 0 | 6.6 |
| 21 | 78.5 | 71.0 | 0 | 6.8 | 0 | 6.2 | 0 | 6.2 | 0 | 6.2 | 0 | 6.2 |
| 22 | 76.1 | 69.9 | 0 | 5.3 | 0 | 4.4 | 0 | 4.4 | 0 | 4.4 | 0 | 4.4 |
| 23 | 73.4 | 68.0 | 0 | 4.2 | 0 | 3.0 | 0 | 3.0 | 0 | 3.0 | 0 | 3.0 |
| 24 | 70.8 | 65.5 | 0 | 2.8 | 0 | 1.8 | 0 | 1.8 | 0 | 1.8 | 0 | 1.8 |

| June | | | ------ Design ----- | | ----- Weekday ----- | | ----- Saturday---- | | ------ Sunday ----- | | ------ Monday ----- | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hour | OADB | OAWB | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton |
| 1 | 74.7 | 70.1 | 0 | 7.4 | 0 | 4.7 | 0 | 4.7 | 0 | 4.7 | 0 | 4.7 |
| 2 | 72.6 | 68.4 | 0 | 6.8 | 0 | 3.5 | 0 | 3.5 | 0 | 3.5 | 0 | 3.5 |
| 3 | 70.9 | 67.3 | 0 | 5.9 | 0 | 2.6 | 0 | 2.6 | 0 | 2.6 | 0 | 2.6 |
| 4 | 69.6 | 66.5 | 0 | 5.3 | 0 | 1.8 | 0 | 1.8 | 0 | 1.8 | 0 | 1.8 |
| 5 | 68.7 | 65.8 | 0 | 4.9 | 0 | 1.3 | 0 | 1.3 | 0 | 1.3 | 0 | 1.3 |
| 6 | 68.5 | 65.7 | 0 | 4.6 | 0 | 1.0 | 0 | 1.0 | 0 | 1.0 | 0 | 1.0 |
| 7 | 69.0 | 66.3 | 0 | 7.0 | 0 | 1.8 | 0 | 1.8 | 0 | 1.8 | 0 | 1.8 |
| 8 | 70.6 | 66.9 | 0 | 9.7 | 0 | 2.7 | 0 | 2.7 | 0 | 2.7 | 0 | 2.7 |
| 9 | 73.0 | 67.7 | 0 | 12.3 | 0 | 3.9 | 0 | 3.9 | 0 | 3.9 | 0 | 3.9 |
| 10 | 76.1 | 68.1 | 0 | 15.9 | 0 | 5.4 | 0 | 5.4 | 0 | 5.4 | 0 | 5.4 |
| 11 | 79.5 | 69.1 | 0 | 18.5 | 0 | 7.2 | 0 | 7.2 | 0 | 7.2 | 0 | 7.2 |
| 12 | 82.9 | 70.1 | 0 | 20.7 | 0 | 8.9 | 0 | 8.9 | 0 | 8.9 | 0 | 8.9 |
| 13 | 86.0 | 71.0 | 0 | 22.5 | 0 | 10.7 | 0 | 10.7 | 0 | 10.7 | 0 | 10.7 |
| 14 | 88.4 | 72.5 | 0 | 23.8 | 0 | 15.8 | 0 | 15.8 | 0 | 15.8 | 0 | 15.8 |
| 15 | 90.0 | 74.0 | 0 | 24.3 | 0 | 18.9 | 0 | 18.9 | 0 | 18.9 | 0 | 18.9 |
| 16 | 90.5 | 73.7 | 0 | 24.2 | 0 | 17.0 | 0 | 17.0 | 0 | 17.0 | 0 | 17.0 |
| 17 | 90.3 | 74.2 | 0 | 23.3 | 0 | 18.1 | 0 | 18.1 | 0 | 18.1 | 0 | 18.1 |
| 18 | 89.4 | 73.9 | 0 | 20.4 | 0 | 16.8 | 0 | 16.8 | 0 | 16.8 | 0 | 16.8 |
| 19 | 88.1 | 74.5 | 0 | 18.5 | 0 | 15.4 | 0 | 15.4 | 0 | 15.4 | 0 | 15.4 |
| 20 | 86.4 | 75.3 | 0 | 16.2 | 0 | 13.7 | 0 | 13.7 | 0 | 13.7 | 0 | 13.7 |
| 21 | 84.3 | 76.5 | 0 | 14.9 | 0 | 13.3 | 0 | 13.3 | 0 | 13.3 | 0 | 13.3 |
| 22 | 81.9 | 75.7 | 0 | 12.8 | 0 | 11.3 | 0 | 11.3 | 0 | 11.3 | 0 | 11.3 |
| 23 | 79.5 | 74.0 | 0 | 11.2 | 0 | 8.7 | 0 | 8.7 | 0 | 8.7 | 0 | 8.7 |
| 24 | 77.0 | 72.1 | 0 | 9.6 | 0 | 6.6 | 0 | 6.6 | 0 | 6.6 | 0 | 6.6 |

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

| July Hour | OADB | OAWB | Design Htg Btuh | Design Clg Ton | Weekday Htg Btuh | Weekday Clg Ton | Saturday Htg Btuh | Saturday Clg Ton | Sunday Htg Btuh | Sunday Clg Ton | Monday Htg Btuh | Monday Clg Ton |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 73.7 | 70.5 | 0 | 8.2 | 0 | 3.8 | 0 | 3.8 | 0 | 3.8 | 0 | 3.8 |
| 2 | 72.4 | 69.4 | 0 | 7.3 | 0 | 3.1 | 0 | 3.1 | 0 | 3.1 | 0 | 3.1 |
| 3 | 71.3 | 68.4 | 0 | 6.5 | 0 | 2.2 | 0 | 2.2 | 0 | 2.2 | 0 | 2.2 |
| 4 | 70.5 | 67.7 | 0 | 6.2 | 0 | 1.7 | 0 | 1.7 | 0 | 1.7 | 0 | 1.7 |
| 5 | 70.0 | 67.4 | 0 | 5.7 | 0 | 1.5 | 0 | 1.5 | 0 | 1.5 | 0 | 1.5 |
| 6 | 69.9 | 67.5 | 0 | 5.6 | 0 | 1.2 | 0 | 1.2 | 0 | 1.2 | 0 | 1.2 |
| 7 | 70.3 | 68.0 | 0 | 7.9 | 0 | 1.9 | 0 | 1.9 | 0 | 1.9 | 0 | 1.9 |
| 8 | 71.7 | 69.0 | 0 | 10.4 | 0 | 3.4 | 0 | 3.4 | 0 | 3.4 | 0 | 3.4 |
| 9 | 73.7 | 69.5 | 0 | 12.9 | 0 | 4.8 | 0 | 4.8 | 0 | 4.8 | 0 | 4.8 |
| 10 | 76.2 | 70.6 | 0 | 15.4 | 0 | 6.6 | 0 | 6.6 | 0 | 6.6 | 0 | 6.6 |
| 11 | 78.9 | 71.8 | 0 | 18.3 | 0 | 8.1 | 0 | 8.1 | 0 | 8.1 | 0 | 8.1 |
| 12 | 81.4 | 73.0 | 0 | 21.5 | 0 | 10.4 | 0 | 10.4 | 0 | 10.4 | 0 | 10.4 |
| 13 | 83.4 | 74.4 | 0 | 22.8 | 0 | 11.7 | 0 | 11.7 | 0 | 11.7 | 0 | 11.7 |
| 14 | 84.8 | 74.8 | 0 | 23.8 | 0 | 13.4 | 0 | 13.2 | 0 | 13.2 | 0 | 13.2 |
| 15 | 85.2 | 75.0 | 0 | 24.3 | 0 | 16.2 | 0 | 16.2 | 0 | 16.2 | 0 | 16.2 |
| 16 | 85.1 | 75.0 | 0 | 24.1 | 0 | 15.7 | 0 | 15.7 | 0 | 15.7 | 0 | 15.7 |
| 17 | 84.6 | 74.7 | 0 | 23.4 | 0 | 14.7 | 0 | 14.7 | 0 | 14.7 | 0 | 14.7 |
| 18 | 83.8 | 74.6 | 0 | 20.8 | 0 | 13.8 | 0 | 13.8 | 0 | 13.8 | 0 | 13.8 |
| 19 | 82.7 | 74.6 | 0 | 19.2 | 0 | 13.3 | 0 | 13.3 | 0 | 13.3 | 0 | 13.3 |
| 20 | 81.4 | 74.4 | 0 | 16.8 | 0 | 11.2 | 0 | 11.2 | 0 | 11.2 | 0 | 11.2 |
| 21 | 79.9 | 74.9 | 0 | 14.6 | 0 | 10.0 | 0 | 10.0 | 0 | 10.0 | 0 | 10.0 |
| 22 | 78.4 | 74.0 | 0 | 12.8 | 0 | 8.2 | 0 | 8.2 | 0 | 8.2 | 0 | 8.2 |
| 23 | 76.8 | 72.7 | 0 | 11.3 | 0 | 6.3 | 0 | 6.3 | 0 | 6.3 | 0 | 6.3 |
| 24 | 75.2 | 71.6 | 0 | 10.1 | 0 | 5.0 | 0 | 5.0 | 0 | 5.0 | 0 | 5.0 |

| August Hour | OADB | OAWB | Design Htg Btuh | Design Clg Ton | Weekday Htg Btuh | Weekday Clg Ton | Saturday Htg Btuh | Saturday Clg Ton | Sunday Htg Btuh | Sunday Clg Ton | Monday Htg Btuh | Monday Clg Ton |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 75.0 | 72.0 | 0 | 7.6 | 0 | 4.7 | 0 | 4.7 | 0 | 4.7 | 0 | 4.7 |
| 2 | 73.2 | 70.3 | 0 | 6.8 | 0 | 3.5 | 0 | 3.5 | 0 | 3.5 | 0 | 3.5 |
| 3 | 71.7 | 68.9 | 0 | 6.1 | 0 | 2.9 | 0 | 2.9 | 0 | 2.9 | 0 | 2.9 |
| 4 | 70.4 | 67.8 | 0 | 5.5 | 0 | 2.0 | 0 | 2.0 | 0 | 2.0 | 0 | 2.0 |
| 5 | 69.5 | 66.8 | 0 | 4.5 | 0 | 1.5 | 0 | 1.5 | 0 | 1.5 | 0 | 1.5 |
| 6 | 68.9 | 66.4 | 0 | 4.9 | 0 | 1.0 | 0 | 1.0 | 0 | 1.0 | 0 | 1.0 |
| 7 | 68.7 | 66.4 | 0 | 5.9 | 0 | 1.0 | 0 | 1.0 | 0 | 1.0 | 0 | 1.0 |
| 8 | 69.2 | 66.8 | 0 | 9.1 | 0 | 2.2 | 0 | 2.2 | 0 | 2.2 | 0 | 2.2 |
| 9 | 70.8 | 67.7 | 0 | 11.9 | 0 | 3.2 | 0 | 3.2 | 0 | 3.2 | 0 | 3.2 |
| 10 | 73.2 | 67.7 | 0 | 14.6 | 0 | 4.2 | 0 | 4.2 | 0 | 4.2 | 0 | 4.2 |
| 11 | 76.2 | 68.8 | 0 | 17.6 | 0 | 5.5 | 0 | 5.5 | 0 | 5.5 | 0 | 5.5 |
| 12 | 79.3 | 70.3 | 0 | 20.2 | 0 | 7.5 | 0 | 7.5 | 0 | 7.5 | 0 | 7.5 |
| 13 | 82.3 | 72.2 | 0 | 23.3 | 0 | 9.9 | 0 | 9.9 | 0 | 9.9 | 0 | 9.9 |
| 14 | 84.7 | 73.7 | 0 | 24.3 | 0 | 11.5 | 0 | 11.5 | 0 | 11.5 | 0 | 11.5 |
| 15 | 86.3 | 74.6 | 0 | 24.9 | 0 | 15.3 | 0 | 15.2 | 0 | 15.2 | 0 | 15.2 |
| 16 | 86.8 | 75.1 | 0 | 24.6 | 0 | 16.2 | 0 | 16.2 | 0 | 16.2 | 0 | 16.2 |
| 17 | 86.6 | 75.1 | 0 | 22.3 | 0 | 15.6 | 0 | 15.6 | 0 | 15.6 | 0 | 15.6 |
| 18 | 86.0 | 75.3 | 0 | 20.8 | 0 | 15.8 | 0 | 15.8 | 0 | 15.8 | 0 | 15.8 |
| 19 | 85.1 | 76.0 | 0 | 19.1 | 0 | 13.9 | 0 | 13.9 | 0 | 13.9 | 0 | 13.9 |
| 20 | 83.8 | 76.8 | 0 | 16.5 | 0 | 13.2 | 0 | 13.2 | 0 | 13.2 | 0 | 13.2 |
| 21 | 82.3 | 77.2 | 0 | 15.2 | 0 | 12.1 | 0 | 12.1 | 0 | 12.1 | 0 | 12.1 |
| 22 | 80.6 | 76.3 | 0 | 12.2 | 0 | 10.4 | 0 | 10.4 | 0 | 10.4 | 0 | 10.4 |
| 23 | 78.7 | 75.3 | 0 | 10.7 | 0 | 8.1 | 0 | 8.1 | 0 | 8.1 | 0 | 8.1 |
| 24 | 76.8 | 73.7 | 0 | 9.5 | 0 | 6.4 | 0 | 6.4 | 0 | 6.4 | 0 | 6.4 |

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

| September | | | ------ Design ----- | | ----- Weekday ----- | | ----- Saturday---- | | ------ Sunday ----- | | ------ Monday ----- | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hour | OADB | OAWB | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton |
| 1 | 69.6 | 67.4 | 0 | 3.2 | 0 | 1.6 | 0 | 1.6 | 0 | 1.5 | 0 | 1.5 |
| 2 | 67.6 | 65.0 | 0 | 2.7 | 0 | 0.9 | 0 | 0.8 | 0 | 0.8 | 0 | 0.8 |
| 3 | 65.8 | 63.4 | 0 | 2.0 | 0 | 0.2 | 0 | 0.2 | 0 | 0.1 | 0 | 0.0 |
| 4 | 64.3 | 62.2 | 0 | 1.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 5 | 63.1 | 61.1 | 0 | 1.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 6 | 62.4 | 60.3 | 0 | 1.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 7 | 62.2 | 60.2 | 0 | 1.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 8 | 62.9 | 60.9 | 0 | 3.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 9 | 64.7 | 61.8 | 0 | 6.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 10 | 67.6 | 62.1 | 0 | 8.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 11 | 71.1 | 63.1 | 0 | 9.4 | 0 | 1.0 | 0 | 0.8 | 0 | 0.7 | 0 | 0.6 |
| 12 | 74.8 | 64.6 | 0 | 11.3 | 0 | 3.2 | 0 | 3.2 | 0 | 3.1 | 0 | 3.1 |
| 13 | 78.3 | 66.7 | 0 | 13.9 | 0 | 4.4 | 0 | 4.4 | 0 | 4.3 | 0 | 4.3 |
| 14 | 81.2 | 68.4 | 0 | 17.2 | 0 | 6.3 | 0 | 6.2 | 0 | 6.2 | 0 | 6.2 |
| 15 | 83.0 | 70.0 | 0 | 17.7 | 0 | 7.8 | 0 | 7.8 | 0 | 7.7 | 0 | 7.7 |
| 16 | 83.7 | 70.5 | 0 | 17.5 | 0 | 8.1 | 0 | 8.1 | 0 | 8.1 | 0 | 8.0 |
| 17 | 83.4 | 70.5 | 0 | 15.2 | 0 | 8.2 | 0 | 8.2 | 0 | 8.1 | 0 | 8.1 |
| 18 | 82.8 | 70.9 | 0 | 13.2 | 0 | 8.2 | 0 | 8.2 | 0 | 8.2 | 0 | 8.2 |
| 19 | 81.6 | 72.7 | 0 | 11.8 | 0 | 7.8 | 0 | 7.8 | 0 | 7.7 | 0 | 7.7 |
| 20 | 80.1 | 74.7 | 0 | 10.7 | 0 | 7.6 | 0 | 7.6 | 0 | 7.6 | 0 | 7.6 |
| 21 | 78.3 | 74.1 | 0 | 8.9 | 0 | 6.4 | 0 | 6.4 | 0 | 6.3 | 0 | 6.3 |
| 22 | 76.3 | 72.4 | 0 | 6.5 | 0 | 4.9 | 0 | 4.8 | 0 | 4.8 | 0 | 4.8 |
| 23 | 74.1 | 70.7 | 0 | 4.8 | 0 | 3.5 | 0 | 3.5 | 0 | 3.5 | 0 | 3.5 |
| 24 | 71.8 | 68.9 | 0 | 3.8 | 0 | 2.4 | 0 | 2.4 | 0 | 2.4 | 0 | 2.4 |

| October | | | ------ Design ----- | | ----- Weekday ----- | | ----- Saturday---- | | ------ Sunday ----- | | ------ Monday ----- | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hour | OADB | OAWB | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton |
| 1 | 52.2 | 50.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | -1,618 | 0.0 |
| 2 | 50.1 | 48.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | -14,464 | 0.0 | -21,118 | 0.0 |
| 3 | 48.4 | 46.9 | 0 | 0.0 | 0 | 0.0 | -23,539 | 0.0 | -24,630 | 0.0 | -25,242 | 0.0 |
| 4 | 47.1 | 45.8 | 0 | 0.0 | 0 | 0.0 | -26,947 | 0.0 | -27,962 | 0.0 | -28,561 | 0.0 |
| 5 | 46.3 | 44.8 | 0 | 0.0 | 0 | 0.0 | -30,069 | 0.0 | -31,063 | 0.0 | -31,649 | 0.0 |
| 6 | 46.0 | 44.5 | 0 | 0.0 | 0 | 0.0 | -33,719 | 0.0 | -34,691 | 0.0 | -35,264 | 0.0 |
| 7 | 46.8 | 45.3 | 0 | 0.0 | 0 | 0.0 | -33,642 | 0.0 | -34,592 | 0.0 | -35,153 | 0.0 |
| 8 | 48.9 | 47.5 | 0 | 0.0 | -7,498 | 0.0 | -27,786 | 0.0 | -28,716 | 0.0 | -29,265 | 0.0 |
| 9 | 52.2 | 49.9 | 0 | 0.0 | -18,947 | 0.0 | -20,487 | 0.0 | -21,397 | 0.0 | -21,933 | 0.0 |
| 10 | 56.2 | 52.5 | 0 | 0.0 | -13,343 | 0.0 | -14,850 | 0.0 | -15,739 | 0.0 | -16,264 | 0.0 |
| 11 | 60.4 | 54.4 | 0 | 0.0 | -4,765 | 0.0 | -6,238 | 0.0 | -7,107 | 0.0 | -7,621 | 0.0 |
| 12 | 64.4 | 56.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | -1,365 | 0.0 | -1,866 | 0.0 |
| 13 | 67.7 | 57.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 14 | 69.8 | 58.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 15 | 70.6 | 58.1 | 0 | 1.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 16 | 70.3 | 57.5 | 0 | 3.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 17 | 69.5 | 57.3 | 0 | 3.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 18 | 68.2 | 57.7 | 0 | 2.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 19 | 66.5 | 60.6 | 0 | 1.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 20 | 64.4 | 60.8 | 0 | 0.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 21 | 62.1 | 59.4 | 0 | 0.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 22 | 59.6 | 57.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 23 | 57.0 | 55.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 24 | 54.5 | 52.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

| November | | | ------ Design ----- | | ----- Weekday ----- | | ----- Saturday---- | | ------ Sunday ----- | | ------ Monday ----- | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hour | OADB | OAWB | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton |
| 1 | 52.0 | 49.2 | -6,670 | 0.0 | 0 | 0.0 | -21,930 | 0.0 | -22,616 | 0.0 | -23,018 | 0.0 |
| 2 | 49.4 | 47.3 | -23,948 | 0.0 | 0 | 0.0 | -26,721 | 0.0 | -27,392 | 0.0 | -27,785 | 0.0 |
| 3 | 47.2 | 45.3 | -27,282 | 0.0 | 0 | 0.0 | -29,768 | 0.0 | -30,424 | 0.0 | -30,809 | 0.0 |
| 4 | 45.3 | 43.4 | -30,631 | 0.0 | 0 | 0.0 | -34,325 | 0.0 | -34,967 | 0.0 | -35,343 | 0.0 |
| 5 | 43.9 | 42.2 | -33,605 | 0.0 | -8,967 | 0.0 | -36,922 | 0.0 | -37,550 | 0.0 | -37,917 | 0.0 |
| 6 | 43.0 | 41.4 | -34,045 | 0.0 | -38,719 | 0.0 | -39,764 | 0.0 | -40,379 | 0.0 | -40,739 | 0.0 |
| 7 | 42.7 | 41.2 | -33,979 | 0.0 | -40,933 | 0.0 | -41,959 | 0.0 | -42,560 | 0.0 | -42,912 | 0.0 |
| 8 | 43.5 | 42.0 | -29,416 | 0.0 | -41,361 | 0.0 | -42,363 | 0.0 | -42,951 | 0.0 | -43,296 | 0.0 |
| 9 | 45.9 | 44.0 | -13,504 | 0.0 | -33,674 | 0.0 | -34,654 | 0.0 | -35,230 | 0.0 | -35,567 | 0.0 |
| 10 | 49.4 | 46.6 | 0 | 0.0 | -27,684 | 0.0 | -28,643 | 0.0 | -29,205 | 0.0 | -29,535 | 0.0 |
| 11 | 53.8 | 48.6 | 0 | 0.0 | -22,313 | 0.0 | -23,250 | 0.0 | -23,801 | 0.0 | -24,124 | 0.0 |
| 12 | 58.4 | 50.6 | 0 | 0.0 | -17,767 | 0.0 | -18,685 | 0.0 | -19,223 | 0.0 | -19,538 | 0.0 |
| 13 | 62.8 | 52.6 | 0 | 0.0 | -11,976 | 0.0 | -12,873 | 0.0 | -13,399 | 0.0 | -13,707 | 0.0 |
| 14 | 66.3 | 54.5 | 0 | 0.0 | -5,167 | 0.0 | -6,044 | 0.0 | -6,557 | 0.0 | -6,858 | 0.0 |
| 15 | 68.7 | 55.7 | 0 | 0.0 | 0 | 0.0 | -1,456 | 0.0 | -1,958 | 0.0 | -2,253 | 0.0 |
| 16 | 69.5 | 56.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 17 | 69.2 | 55.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 18 | 68.3 | 57.0 | 0 | 0.0 | 0 | 0.0 | -736 | 0.0 | -2,004 | 0.0 | -2,424 | 0.0 |
| 19 | 66.9 | 59.4 | 0 | 0.0 | -1,072 | 0.0 | -3,440 | 0.0 | -3,899 | 0.0 | -4,168 | 0.0 |
| 20 | 65.0 | 59.4 | 0 | 0.0 | -5,901 | 0.0 | -6,666 | 0.0 | -7,115 | 0.0 | -7,379 | 0.0 |
| 21 | 62.8 | 58.2 | 0 | 0.0 | -7,636 | 0.0 | -8,385 | 0.0 | -8,824 | 0.0 | -9,081 | 0.0 |
| 22 | 60.2 | 56.1 | 0 | 0.0 | -12,285 | 0.0 | -13,017 | 0.0 | -13,446 | 0.0 | -13,698 | 0.0 |
| 23 | 57.5 | 54.0 | 0 | 0.0 | -15,003 | 0.0 | -15,720 | 0.0 | -16,140 | 0.0 | -16,387 | 0.0 |
| 24 | 54.7 | 51.7 | 0 | 0.0 | -19,670 | 0.0 | -20,370 | 0.0 | -20,781 | 0.0 | -21,022 | 0.0 |

| December | | | ------ Design ----- | | ----- Weekday ----- | | ----- Saturday---- | | ------ Sunday ----- | | ------ Monday ----- | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hour | OADB | OAWB | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton | Htg Btuh | Clg Ton |
| 1 | 44.9 | 42.5 | -35,099 | 0.0 | -40,817 | 0.0 | -41,829 | 0.0 | -42,423 | 0.0 | -42,770 | 0.0 |
| 2 | 43.2 | 41.1 | -38,202 | 0.0 | -44,319 | 0.0 | -45,310 | 0.0 | -45,890 | 0.0 | -46,230 | 0.0 |
| 3 | 41.8 | 39.8 | -41,558 | 0.0 | -46,480 | 0.0 | -47,449 | 0.0 | -48,017 | 0.0 | -48,349 | 0.0 |
| 4 | 40.7 | 38.7 | -44,292 | 0.0 | -48,884 | 0.0 | -49,831 | 0.0 | -50,386 | 0.0 | -50,712 | 0.0 |
| 5 | 40.1 | 38.4 | -45,509 | 0.0 | -51,037 | 0.0 | -51,964 | 0.0 | -52,506 | 0.0 | -52,825 | 0.0 |
| 6 | 39.9 | 38.4 | -47,428 | 0.0 | -53,412 | 0.0 | -54,319 | 0.0 | -54,850 | 0.0 | -55,161 | 0.0 |
| 7 | 40.5 | 39.0 | -47,352 | 0.0 | -54,508 | 0.0 | -55,395 | 0.0 | -55,914 | 0.0 | -56,218 | 0.0 |
| 8 | 42.2 | 40.7 | -44,971 | 0.0 | -54,763 | 0.0 | -55,630 | 0.0 | -56,139 | 0.0 | -56,436 | 0.0 |
| 9 | 44.9 | 43.4 | -31,923 | 0.0 | -47,187 | 0.0 | -48,034 | 0.0 | -48,531 | 0.0 | -48,823 | 0.0 |
| 10 | 48.2 | 45.8 | -20,428 | 0.0 | -40,819 | 0.0 | -41,648 | 0.0 | -42,135 | 0.0 | -42,419 | 0.0 |
| 11 | 51.7 | 48.3 | -10,175 | 0.0 | -34,667 | 0.0 | -35,479 | 0.0 | -35,953 | 0.0 | -36,232 | 0.0 |
| 12 | 55.0 | 50.7 | -3,610 | 0.0 | -29,314 | 0.0 | -30,108 | 0.0 | -30,573 | 0.0 | -30,844 | 0.0 |
| 13 | 57.7 | 52.0 | 0 | 0.0 | -25,024 | 0.0 | -25,799 | 0.0 | -26,253 | 0.0 | -26,520 | 0.0 |
| 14 | 59.5 | 52.6 | 0 | 0.0 | -20,831 | 0.0 | -21,590 | 0.0 | -22,034 | 0.0 | -22,294 | 0.0 |
| 15 | 60.1 | 52.7 | 0 | 0.0 | -18,781 | 0.0 | -19,522 | 0.0 | -19,956 | 0.0 | -20,211 | 0.0 |
| 16 | 59.9 | 52.6 | 0 | 0.0 | -18,326 | 0.0 | -19,051 | 0.0 | -19,476 | 0.0 | -19,724 | 0.0 |
| 17 | 59.2 | 52.1 | 0 | 0.0 | -18,407 | 0.0 | -19,115 | 0.0 | -19,530 | 0.0 | -19,774 | 0.0 |
| 18 | 58.2 | 51.8 | 0 | 0.0 | -20,160 | 0.0 | -20,853 | 0.0 | -21,259 | 0.0 | -21,497 | 0.0 |
| 19 | 56.8 | 52.2 | 0 | 0.0 | -22,097 | 0.0 | -22,774 | 0.0 | -23,171 | 0.0 | -23,404 | 0.0 |
| 20 | 55.0 | 51.4 | 0 | 0.0 | -25,457 | 0.0 | -26,119 | 0.0 | -26,508 | 0.0 | -26,735 | 0.0 |
| 21 | 53.1 | 50.1 | 0 | 0.0 | -26,769 | 0.0 | -27,417 | 0.0 | -27,796 | 0.0 | -28,019 | 0.0 |
| 22 | 51.0 | 48.1 | -20,767 | 0.0 | -31,351 | 0.0 | -31,985 | 0.0 | -32,356 | 0.0 | -32,574 | 0.0 |
| 23 | 48.9 | 46.2 | -25,788 | 0.0 | -34,633 | 0.0 | -35,253 | 0.0 | -35,617 | 0.0 | -35,830 | 0.0 |
| 24 | 46.9 | 44.1 | -31,071 | 0.0 | -37,538 | 0.0 | -38,145 | 0.0 | -38,500 | 0.0 | -38,709 | 0.0 |

01 Card - Job Information
-------------------------

Project: ENERGY STUDY OF COOLING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORPS OF ENGINEERS
Program User: BON
Comments: BUILDING 28414, CHAPEL

-----CARD 08-- Climatic Information -----------------------------------------------------

| Weather Code | Summer Clearness Number | Winter Clearness Number | Summer Design Dry Bulb | Summer Design Wet Bulb | Winter Design Dry Bulb | Building Orientation | Summer Ground Reflect | Winter Ground Reflect |
|---|---|---|---|---|---|---|---|---|
| AUGUSTA | | | | | | 90 | | |

-----CARD 09-- Load Simulation Periods----------------------------------------

| 1st Month Cooling Simulation | Last Month Cooling Simulation | Peak Cooling Load Hr | 1st Month Summer Period | Last Month Summer Period | 1st Month Daylight Savings | Last Month Daylight Savings |
|---|---|---|---|---|---|---|
| APR | OCT | | | | | |

-----CARD 10 -- Load Simulation Parameters----------------------------

| Cooling Load Method | Heating Load Method | Ventilation Method | Airflow Input Units | Airflow Output Units | Room Circulation Rate | Put Wall RA Load to Room |
|---|---|---|---|---|---|---|
| CLTD-CLF | TETD-TA1 | OAHIGH | ACTUAL | ACTUAL | MED-RCR | NO |

--------------------- Load Section  Alternative #1 ---------------------

---- Load Alternative ----

| Number | Description |
|---|---|
| 1 | BUILDING 28414 (CHAPEL) |

-----CARD 20-- General Room Parameters -------------------------------------------------------------------------

| Room Number | Zone Reference Number | Room Descrip | Floor Length | Floor Width | Const Type | Plenum Height | Acoustic Ceiling Resistance | Floor to Floor Height | Duplicate Floors Multiplier | Duplicate Rooms per Zone | Perimeter Depth |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | LOW ROOF PART | 5604 | | | 3.0 | | 12.0 | | | |

-----CARD 20-- General Room Parameters ----------------------------------------------------------------------------------

| Room Number | Zone Reference Number | Room Descrip | Floor Length | Floor Width | Const Type | Plenum Height | Acoustic Ceiling Resistance | Floor to Floor Height | Duplicate Floors Multiplier | Duplicate Rooms per Zone | Perimeter Depth |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1 | HIGH ROOF NAVE | 2650 | | 6 | 2.0 | | 23.5 | | | |

-----CARD 21-- Thermostat Parameters ----------------------------------------------------------------------------------

| Room Number | Cooling Room Design DB | Room Design RH | Cooling T'stat Driftpoint | Cooling T'stat Schedule | Heating Room Design DB | Heating T'stat Driftpoint | Heating T'stat Schedule | T'stat Location Flag | Mass / No. Hrs Average | Carpet On Floor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 50 | | CLGCONST | | | HTGCONST | | MED70 | NO |
| 2 | | 50 | | | | | | | MED70 | YES |

-----CARD 22-- Roof Parameters -------------------------------------------------

| Room Number | Roof Number | Roof Equal to Floor? | Roof Length | Roof Width | Roof U-Value | Const Type | Roof Direction | Roof Tilt | Roof Alpha |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | YES | | | | 176 | | | |
| 2 | 1 | | 25.5 | 40 | | 170 | 270 | 64 | |
| 2 | 2 | | 25.5 | 40 | | 170 | 0 | 64 | |
| 2 | 3 | | 25.5 | 25 | | 170 | 180 | 40 | |
| 2 | 4 | | 25.5 | 25 | | 170 | 90 | 40 | |

-----CARD 23-- Skylight Parameters-------------------------------------------------------------------------------------

| Room Number | Roof Number | Skylight Length | Skylight Width | Pct Glass or No. of Windows | Skylight U-Value | Shading Coefficient | External Shading Type | Internal Shading Type | Percent Solar to Ret. Air | Visible Transmittance | Inside Visible Reflectance |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1 | 11.1 | 7 | 1 | .53 | .89 | | | | | |
| 2 | 2 | 11.1 | 7 | 1 | .53 | .89 | | | | | |
| 2 | 3 | 6.25 | 7 | 1 | .53 | .89 | | | | | |
| 2 | 4 | 6.25 | 7 | 1 | .53 | .89 | | | | | |

-----CARD 24-- Wall Parameters -----------------------------------------------

| Room Number | Wall Number | Wall Length | Wall Height | Wall U-Value | Wall Constuc Type | Wall Direction | Wall Tilt | Wall Alpha | Ground Reflectance Multiplier |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 254.7 | 12 | | 194 | 0 | | | |
| 1 | 2 | 85.0 | 12 | | 194 | 90 | | | |
| 1 | 3 | 69.0 | 12 | | 194 | 180 | | | |
| 1 | 4 | 96.0 | 12 | | 194 | 270 | | | |
| 2 | 1 | 41.1 | 12 | | 194 | 0 | | | |
| 2 | 2 | 15 | 12 | | 194 | 90 | | | |
| 2 | 3 | 52 | 12 | | 194 | 180 | | | |

-----CARD 24-- Wall Parameters ----------------------------------------------------------

| Room Number | Wall Number | Wall Length | Wall Height | Wall U-Value | Wall Constuc Type | Wall Direction | Wall Tilt | Wall Alpha | Ground Reflectance Multiplier |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 4 | 18 | 12 | | 194 | 270 | | | |

-----CARD 25-- Wall/Glass Parameters -------------------------------------------------------------------------------------

| Room Number | Wall Number | Glass Length | Glass Width | Pct Glass or No. of Windows | Glass U-Value | Shading Coefficient | External Shading Type | Internal Shading Type | Percent Solar to Ret. Air | Visible Transmittance | Inside Visible Reflectance |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 662 | 1 | 1 | 1.09 | .56 | 4 | | | | |
| 1 | 2 | 44 | 1 | 1 | 1.09 | .56 | | | | | |
| 1 | 3 | 4.5 | 5.5 | 1 | 1.09 | .56 | 5 | | | | |
| 1 | 4 | 26.5 | 8.0 | 1 | 1.09 | .56 | 3 | | | | |

-----CARD 26-- Schedules ------------------------------------------------------------------------------

| Room Number | People | Lights | Ventilation | Infiltration | Reheat Minimum | Cooling Fans | Heating Fan | Auxiliary Fan | Room Exhaust | Daylighting Controls |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | FGHEAT | FGHEAT | YES | YES | | | | | | |
| 2 | FGHEAT | FGHEAT | YES | YES | | | | | | |

-----CARD 27-- People and Lights -------------------------------------------------------------------------

| Room Number | People Value | People Units | People Sensible | People Latent | Lighting Value | Lighting Units | Lighting Fixture Type | Ballast Factor | Percent Lights to Ret. Air | Daylighting Reference Point 1 | Daylighting Reference Point 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 40 | PEOPLE | 255 | 325 | 8900 | WATTS | ASHRAE2 | | | | |
| 2 | 200 | PEOPLE | 255 | 255 | 7380 | WATTS | INCAND | | | | |

-----CARD 28--- Miscellaneous Equipment ------------------------------------------------------------------------------------

| Room Number | Misc Equipment Number | Equipment Descrip | Energy Consump Value | Energy Consump Units | Schedule Code | Energy Meter Code | Percent of Load Sensible | Percent Misc. Load to Room | Percent Misc. Sens to Ret. Air | Radiant Fraction | Optional Air Path |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | KITCHEN EQUIP | 1.47 | KW | FGHEAT | | | | | | |
| 1 | 2 | P.C.'S AND PRITR | 4715 | BTUH | FGHEAT | | | | | | |
| 1 | 3 | TV, VCR, TYPWTR | 435 | WATTS | FGHEAT | | | | | | |
| 1 | 4 | FRIG | 920 | BTUH | FGHEAT | | | | | | |

-----CARD 29--- Room Airflows -------------------------------------------------------------------------------------------

| Room Number | Ventilation Cooling Value | Ventilation Cooling Units | Ventilation Heating Value | Ventilation Heating Units | Infiltration Cooling Value | Infiltration Cooling Units | Infiltration Heating Value | Infiltration Heating Units | Reheat Minimum Value | Reheat Minimum Units |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 15 | CFM-P | 15 | CFM-P | .08 | CFM-SF | .1 | CFM-SF | | |

-----CARD 29--- Room Airflows --------------------------------------------------------------------------

| | --------------Ventilation-------------- | | | | --------------Infiltration-------------- | | | | --Reheat Minimum-- | |
|---|---|---|---|---|---|---|---|---|---|---|
| | -----Cooling----- | | -----Heating---- | | -----Cooling----- | | -----Heating----- | | | |
| Room | | | | | | | | | | | |
| Number | Value | Units | Value | Units | Value | Units | Value | Units | Value | Units |
| 2 | 15 | CFM-P | 15 | CFM-P | .04 | CFM-SF | .05 | CFM-SF | | |

-----CARD 30- Fan Airflows --------------------------------------------------------------------------

| | ---------------Main--------------- | | | | -------------Auxiliary------------ | | | | --Room Exhaust-- | |
|---|---|---|---|---|---|---|---|---|---|---|
| | ----Cooling---- | | ----Heating---- | | ----Cooling---- | | ----Heating---- | | | |
| Room | | | | | | | | | | | |
| Number | Value | Units | Value | Units | Value | Units | Value | Units | Value | Units |
| 1 | 1 | CFM-SF | 1 | CFM-SF | | | | | | |
| 2 | 1 | CFM-SF | 1 | CFM-SF | | | | | | |

-----CARD 33-- External Shading --------------------------------------------------------------------

| | ---------OVERHANG--------- | | | --------------------VERTICAL FINS-------------------- | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Height | | | | Left | | Right | Adjacent |
| Shading | Glass | Above | Projection | Glass | Projection | Projection | Projection | Projection | Building |
| Type | Height | Glass | Out | Width | Left | Out | Right | Out | Flag |
| 3 | 8.0 | | 3.4 | | | | | | |
| 4 | 6.5 | | 3 | | | | | | |
| 5 | 6.5 | | 1 | | | | | | |

--------------------- System Section  Alternative #1 ---------------------

-----CARD 40--- System Type -------------------------------------------------------------

| | | -----------OPTIONAL VENTILATION SYSTEM----------- | | | | | |
|---|---|---|---|---|---|---|---|
| System | | Ventil | | | | | Fan |
| Set | System | Deck | Cooling | Heating | Cooling | Heating | Static |
| Number | Type | Location | SADBVh | SADBVh | Schedule | Schedule | Pressure |
| 1 | VAV | | | | | | |

-----CARD 41-- Zone Assignment ---------------------------------------------------------------

| System | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Set | Ref #1 | | Ref #2 | | Ref #3 | | Ref #4 | | Ref #5 | | Ref #6 | |
| Number | Begin | End | Begin | End | Begin | End | Begin | End | Begin | End | Begin | End |
| 1 | 1 | 1 | | | | | | | | | | |

```
-----CARD 42--- Fan SP and Duct Parameters--------------------------------------------------
System Cool Heat Return Mn Exh Aux  Rm Exh Cool     Return  Supply Supply Return
Set    Fan  Fan  Fan    Fan    Fan  Fan    Fan Mtr  Fan Mtr Duct   Duct   Air
Number SP   SP   SP     SP     SP   SP     Loc      Loc     Ht Gn  Loc    Path
1
```

Utility Description Reference Table

    Schedules:
        CLGCONST SAMPLE COOLING TSTAT SCHEDULE
        FGHEAT SCHD FOR HEAT LOAD CALCS
        HTGCONST SAMPLE HEATING TSTAT SCHEDULE
        YES AVAILABLE (100%)
    System:
        VAV VARIABLE AIR VOLUME

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Temperature
---- ------------
  0   75
 24

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   0
 24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
  0   0
 24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
   0   100
  24

```
************************************************************************
************************************************************************
**                                                                  **
**            T R A C E   6 0 0   A N A L Y S I S                    **
**                                                                  **
**              by              **                                  **
**                                                                  **
************************************************************************
************************************************************************
```

ENERGY STUDY OF COOLING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORPS OF ENGINEERS
BON
BUILDING 25414 (8 BLDGS)

Weather File Code:	AUGUSTA
Location:	FORT GORDON, GEORGIA
Latitude:	33.0 (deg)
Longitude:	82.0 (deg)
Time Zone:	5
Elevation:	143 (ft)
Barometric Pressure:	29.8 (in. Hg)

Summer Clearness Number:	0.90
Winter Clearness Number:	0.90
Summer Design Dry Bulb:	95 (F)
Summer Design Wet Bulb:	76 (F)
Winter Design Dry Bulb:	23 (F)
Summer Ground Relectance:	0.20
Winter Ground Relectance:	0.20

Air Density:	0.0756 (Lbm/cuft)
Air Specific Heat:	0.2444 (Btu/lbm/F)
Density-Specific Heat Prod:	1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor:	4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor:	4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April   To October
System Simulation Period: January   To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 8:40:57   8/17/94
Dataset Name: FGTYPS44 .TM

System   1   Peak   SZ   - SINGLE ZONE

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*************************** COOLING COIL PEAK ******************************** CLG SPACE PEAK ************ HEATING COIL PEAK ********
Peaked at Time ==)          Mo/Hr:  8/15                         *       Mo/Hr:  6/17      *          Mo/Hr: 13/ 1
Outside Air ==)             OADB/WB/HR:  97/ 76/105.0            *       OADB:  98         *          OADB:  23
                                                                *                          *
                      Space     Ret. Air  Ret. Air    Net   Percnt *    Space    Percnt *  Space Peak   Coil Peak   Percnt
                   Sens.+Lat.   Sensible   Latent    Total  Of Tot *   Sensible  Of Tot *  Space Sens   Tot Sens   Of Tot
Envelope Loads      (Btuh)      (Btuh)    (Btuh)    (Btuh)   (%)   *   (Btuh)     (%)   *    (Btuh)      (Btuh)      (%)
  Skylite Solr          0          0                    0    0.00  *       0      0.00  *       0           0       0.00
  Skylite Cond          0          0                    0    0.00  *       0      0.00  *       0           0       0.00
  Roof Cond             0       14,407              14,407   26.31 *       0      0.00  *       0       -7,832     12.69
  Glass Solar        7,560          0               7,560   13.81 *    9,576     37.95 *       0           0       0.00
  Glass Cond         5,061          0               5,061    9.24 *    5,736     22.73 *  -12,770     -12,770     20.69
  Wall Cond          2,058        468               2,526    4.61 *    2,494      9.89 *   -5,033      -6,509     10.55
  Partition             0                               0    0.00 *       0      0.00  *       0           0       0.00
  Exposed Floor         0                               0    0.00 *       0      0.00  *       0           0       0.00
  Infiltration       6,724                          6,724   12.28 *    4,231     16.77 *  -10,258     -10,258     16.62
  Sub Total==)      21,403     14,875              36,279   66.25 *   22,038     87.34 *  -28,062     -37,370     60.56
Internal Loads                                                     *                    *
  Lights                0          0                    0    0.00  *       0      0.00  *       0           0       0.00
  People                0                               0    0.00  *       0      0.00  *       0           0       0.00
  Misc                  0          0         0          0    0.00  *       0      0.00  *       0           0       0.00
  Sub Total==)          0          0         0          0    0.00  *       0      0.00  *       0           0       0.00
Ceiling Load         3,305     -3,305                  0    0.00  *    3,194     12.66 *   -2,068          0       0.00
Outside Air             0          0         0     21,474   39.21 *       0      0.00  *       0      -26,210     42.47
Sup. Fan Heat                                          0    0.00  *              0.00  *                   0       0.00
Ret. Fan Heat                      0                   0    0.00  *              0.00  *                   0       0.00
Duct Heat Pkup                     0                   0    0.00  *              0.00  *                   0       0.00
OV/UNDR Sizing          0                             0    0.00  *       0      0.00  *       0           0       0.00
Exhaust Heat                    -2,992       0     -2,992   -5.46 *              0.00  *               1,872      -3.03
Terminal Bypass                    0         0          0    0.00 *              0.00  *                   0       0.00
                                                                  *                    *
Grand Total==)      24,708      8,578        0     54,761  100.00 *   25,232    100.00 *  -30,130     -61,708    100.00
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-------------------------------COOLING COIL SELECTION------------------------------        --------------AREAS--------------
          Total Capacity  Sens Cap.  Coil Airfl     Entering DB/WB/HR      Leaving DB/WB/HR    Gross Total     Glass (sf) (%)
          (Tons)  (Mbh)     (Mbh)      (cfm)    Deg F Deg F  Grains   Deg F Deg F  Grains   Floor    2,030
Main Clg    4.6    54.8      43.1      2,030     84.4  69.9   87.0    63.8  62.1   81.3    Part        0
Aux  Clg    0.0     0.0       0.0         0       0.0   0.0    0.0     0.0   0.0    0.0    ExFlr       0
Opt Vent    0.0     0.0       0.0         0       0.0   0.0    0.0     0.0   0.0    0.0    Roof     2,030         0     0
Totals      4.6    54.8                                                                    Wall     2,055       252    12
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-----------HEATING COIL SELECTION-------------     --------AIRFLOWS (cfm)--------     --ENGINEERING CHECKS--   --TEMPERATURES (F)---
          Capacity  Coil Airfl  Ent    Lvg      Type     Cooling  Heating    Clg % OA        25.9    Type     Clg    Htg
          (Mbh)      (cfm)    Deg F  Deg F    Vent        525      525      Clg Cfm/Sqft    1.00    SADB     63.8   81.4
Main Htg   -61.7     2,030     54.0   81.4    Infil       164      205      Clg Cfm/Ton   444.85    Plenum   80.1   64.8
Aux  Htg     0.0        0       0.0    0.0    Supply     2,030    2,030     Clg Sqft/Ton  444.85    Return   80.1   64.8
Preheat    -22.1     2,030     54.0   63.8    Mincfm        0        0      Clg Btuh/Sqft  26.98    Ret/OA   84.4   54.0
Reheat       0.0        0       0.0    0.0    Return     2,030    2,030     No. People       35     Runarnd  75.0   68.0
Humidif      0.0        0       0.0    0.0    Exhaust     525      525      Htg % OA        25.9    Fn MtrTD  0.0    0.0
Opt Vent     0.0        0       0.0    0.0    Rm Exh        0        0      Htg Cfm/SqFt    1.00    Fn BldTD  0.0    0.0
Total      -61.7                              Auxil         0        0      Htg Btuh/SqFt -30.40    Fn Frict  0.0    0.0
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BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

January			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-44,951	0.0	-41,463	0.0	-41,463	0.0	-41,463	0.0	-41,463	0.0
2	32.9	30.7	-43,794	0.0	-42,170	0.0	-42,170	0.0	-42,170	0.0	-42,170	0.0
3	33.1	31.3	-43,141	0.0	-42,335	0.0	-42,335	0.0	-42,335	0.0	-42,335	0.0
4	33.9	32.1	-42,579	0.0	-41,432	0.0	-41,432	0.0	-41,432	0.0	-41,432	0.0
5	35.2	33.5	-39,323	0.0	-40,970	0.0	-40,970	0.0	-40,970	0.0	-40,970	0.0
6	37.0	35.4	-37,161	0.0	-39,899	0.0	-39,899	0.0	-39,899	0.0	-39,899	0.0
7	39.0	37.6	-36,330	0.0	-38,051	0.0	-38,051	0.0	-38,051	0.0	-38,051	0.0
8	41.3	40.1	-34,467	0.0	-36,056	0.0	-36,056	0.0	-36,056	0.0	-36,056	0.0
9	43.7	42.5	-29,324	0.0	-32,430	0.0	-32,430	0.0	-32,430	0.0	-32,430	0.0
10	46.1	44.0	-23,616	0.0	-29,776	0.0	-29,776	0.0	-29,776	0.0	-29,776	0.0
11	48.4	45.0	-17,645	0.0	-26,410	0.0	-26,410	0.0	-26,410	0.0	-26,410	0.0
12	50.5	45.6	-12,075	0.0	-23,846	0.0	-23,846	0.0	-23,846	0.0	-23,846	0.0
13	52.2	46.1	-7,870	0.0	-21,151	0.0	-21,151	0.0	-21,151	0.0	-21,151	0.0
14	53.5	46.4	-5,136	0.0	-19,267	0.0	-19,267	0.0	-19,267	0.0	-19,267	0.0
15	54.3	46.3	-4,039	0.0	-18,339	0.0	-18,339	0.0	-18,339	0.0	-18,339	0.0
16	54.6	46.1	-3,813	0.0	-17,572	0.0	-17,572	0.0	-17,572	0.0	-17,572	0.0
17	54.0	45.9	-5,452	0.0	-18,554	0.0	-18,554	0.0	-18,554	0.0	-18,554	0.0
18	52.5	45.0	-11,023	0.0	-20,861	0.0	-20,861	0.0	-20,861	0.0	-20,861	0.0
19	50.1	44.8	-16,018	0.0	-23,616	0.0	-23,616	0.0	-23,616	0.0	-23,616	0.0
20	47.1	43.3	-19,792	0.0	-26,749	0.0	-26,749	0.0	-26,749	0.0	-26,749	0.0
21	43.7	40.4	-23,104	0.0	-30,354	0.0	-30,354	0.0	-30,354	0.0	-30,354	0.0
22	40.4	37.3	-25,975	0.0	-33,812	0.0	-33,812	0.0	-33,812	0.0	-33,812	0.0
23	37.3	34.9	-28,363	0.0	-36,775	0.0	-36,775	0.0	-36,775	0.0	-36,775	0.0
24	34.9	32.6	-30,367	0.0	-39,498	0.0	-39,498	0.0	-39,498	0.0	-39,498	0.0

February			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-30,228	0.0	-33,089	0.0	-33,089	0.0	-33,089	0.0	-33,089	0.0
2	39.7	37.1	-31,997	0.0	-35,157	0.0	-35,157	0.0	-35,157	0.0	-35,157	0.0
3	37.8	35.1	-33,392	0.0	-37,277	0.0	-37,277	0.0	-37,277	0.0	-37,277	0.0
4	36.3	33.8	-34,381	0.0	-38,740	0.0	-38,740	0.0	-38,740	0.0	-38,740	0.0
5	35.1	32.6	-35,220	0.0	-40,525	0.0	-40,525	0.0	-40,525	0.0	-40,525	0.0
6	34.4	32.0	-35,011	0.0	-41,468	0.0	-41,468	0.0	-41,468	0.0	-41,468	0.0
7	34.1	31.9	-34,831	0.0	-42,311	0.0	-42,311	0.0	-42,311	0.0	-42,311	0.0
8	34.6	32.4	-32,073	0.0	-41,524	0.0	-41,524	0.0	-41,524	0.0	-41,524	0.0
9	36.0	33.8	-26,311	0.0	-38,641	0.0	-38,641	0.0	-38,641	0.0	-38,641	0.0
10	38.2	34.7	-20,569	0.0	-36,055	0.0	-36,055	0.0	-36,055	0.0	-36,055	0.0
11	40.9	36.2	-15,184	0.0	-32,972	0.0	-32,972	0.0	-32,972	0.0	-32,972	0.0
12	43.9	37.4	-9,953	0.0	-29,925	0.0	-29,925	0.0	-29,925	0.0	-29,925	0.0
13	46.9	39.4	-6,006	0.0	-25,549	0.0	-25,549	0.0	-25,549	0.0	-25,549	0.0
14	49.7	41.4	-3,326	0.0	-22,560	0.0	-22,560	0.0	-22,560	0.0	-22,560	0.0
15	51.8	42.8	-2,143	0.0	-20,054	0.0	-20,054	0.0	-20,054	0.0	-20,054	0.0
16	53.2	43.9	-2,024	0.0	-18,978	0.0	-18,978	0.0	-18,978	0.0	-18,978	0.0
17	53.7	44.2	-3,155	0.0	-18,290	0.0	-18,290	0.0	-18,290	0.0	-18,290	0.0
18	53.4	44.4	-6,845	0.0	-18,720	0.0	-18,720	0.0	-18,720	0.0	-18,720	0.0
19	52.7	44.4	-12,987	0.0	-21,225	0.0	-21,225	0.0	-21,225	0.0	-21,225	0.0
20	51.5	45.2	-17,800	0.0	-22,715	0.0	-22,715	0.0	-22,715	0.0	-22,715	0.0
21	50.0	44.6	-21,360	0.0	-24,663	0.0	-24,663	0.0	-24,663	0.0	-24,663	0.0
22	48.1	43.3	-24,469	0.0	-26,552	0.0	-26,552	0.0	-26,552	0.0	-26,552	0.0
23	46.1	41.8	-26,582	0.0	-28,710	0.0	-28,710	0.0	-28,710	0.0	-28,710	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

March			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-15,715	0.0	-20,847	0.0	-20,850	0.0	-20,850	0.0	-20,850	0.0
2	48.7	44.6	-17,544	0.0	-23,806	0.0	-23,808	0.0	-23,808	0.0	-23,808	0.0
3	46.6	42.9	-19,236	0.0	-25,784	0.0	-25,784	0.0	-25,784	0.0	-25,784	0.0
4	44.9	41.4	-20,800	0.0	-27,848	0.0	-27,848	0.0	-27,848	0.0	-27,848	0.0
5	43.9	40.8	-21,302	0.0	-29,012	0.0	-29,012	0.0	-29,012	0.0	-29,012	0.0
6	43.5	40.8	-21,577	0.0	-30,098	0.0	-30,098	0.0	-30,098	0.0	-30,098	0.0
7	44.0	41.4	-20,721	0.0	-29,756	0.0	-29,756	0.0	-29,756	0.0	-29,756	0.0
8	45.4	42.7	-15,055	0.0	-26,788	0.0	-26,788	0.0	-26,788	0.0	-26,788	0.0
9	47.7	44.3	-8,599	0.0	-23,258	0.0	-23,258	0.0	-23,258	0.0	-23,258	0.0
10	50.6	45.8	-2,392	0.0	-19,105	0.0	-19,105	0.0	-19,105	0.0	-19,105	0.0
11	53.9	47.4	0	0.0	-14,798	0.0	-14,798	0.0	-14,798	0.0	-14,798	0.0
12	57.4	49.0	0	0.0	-10,270	0.0	-10,270	0.0	-10,270	0.0	-10,270	0.0
13	60.7	50.8	0	0.0	-6,302	0.0	-6,302	0.0	-6,302	0.0	-6,302	0.0
14	63.6	52.7	0	0.2	-3,128	0.0	-3,128	0.0	-3,128	0.0	-3,128	0.0
15	65.9	53.7	0	1.3	-906	0.0	-906	0.0	-906	0.0	-906	0.0
16	67.3	54.4	0	1.2	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	0.2	-884	0.0	-884	0.0	-884	0.0	-884	0.0
20	64.7	56.0	0	0.0	-5,675	0.0	-5,675	0.0	-5,675	0.0	-5,675	0.0
21	62.5	56.0	0	0.0	-8,538	0.0	-8,538	0.0	-8,538	0.0	-8,538	0.0
22	60.0	54.1	0	0.0	-11,555	0.0	-11,555	0.0	-11,555	0.0	-11,555	0.0
23	57.1	51.9	0	0.0	-14,508	0.0	-14,508	0.0	-14,508	0.0	-14,508	0.0
24	54.2	49.4	-10,955	0.0	-17,962	0.0	-17,962	0.0	-17,962	0.0	-17,962	0.0

April			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	-2,469	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	-4,535	0.0	0	0.0	-4,533	0.0	-4,533	0.0	-4,533	0.0
3	57.0	53.5	-6,120	0.0	-6,525	0.0	-13,146	0.0	-13,146	0.0	-13,146	0.0
4	55.4	52.4	-7,198	0.0	-15,012	0.0	-15,007	0.0	-15,007	0.0	-15,007	0.0
5	54.2	51.4	-8,191	0.0	-16,489	0.0	-16,492	0.0	-16,492	0.0	-16,492	0.0
6	53.5	50.9	-8,497	0.0	-17,534	0.0	-17,534	0.0	-17,534	0.0	-17,534	0.0
7	53.2	51.1	-5,880	0.0	-17,448	0.0	-17,448	0.0	-17,448	0.0	-17,448	0.0
8	53.9	51.5	0	0.0	-14,877	0.0	-14,877	0.0	-14,877	0.0	-14,877	0.0
9	55.9	52.1	0	0.0	-11,715	0.0	-11,715	0.0	-11,715	0.0	-11,715	0.0
10	58.9	53.2	0	0.0	-6,962	0.0	-6,962	0.0	-6,962	0.0	-6,962	0.0
11	62.6	55.2	0	0.0	-2,377	0.0	-2,377	0.0	-2,377	0.0	-2,377	0.0
12	66.5	57.3	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	2.0	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	2.2	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	2.3	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	2.3	0	0.2	0	0.2	0	0.2	0	0.2
17	75.6	62.0	0	2.2	0	0.8	0	0.8	0	0.8	0	0.8
18	74.9	61.7	0	2.0	0	0.7	0	0.7	0	0.7	0	0.7
19	73.7	62.0	0	1.4	0	0.5	0	0.5	0	0.5	0	0.5
20	72.1	62.4	0	0.8	0	0.1	0	0.1	0	0.1	0	0.1
21	70.2	63.3	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
22	68.0	62.5	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
23	65.7	60.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

May			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	65.7	61.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	63.6	59.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	0.0	-10,208	0.0	-10,605	0.0	-10,605	0.0	-10,605	0.0
7	59.4	56.5	0	0.0	-9,264	0.0	-9,263	0.0	-9,263	0.0	-9,263	0.0
8	60.1	56.3	0	0.0	-6,872	0.0	-6,872	0.0	-6,872	0.0	-6,872	0.0
9	62.4	56.3	0	0.7	-3,112	0.0	-3,112	0.0	-3,112	0.0	-3,112	0.0
10	65.7	57.2	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	2.1	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	2.6	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	3.0	0	0.0	0	0.0	0	0.0	0	0.0
14	81.9	65.3	0	3.3	0	1.5	0	1.5	0	1.5	0	1.5
15	84.1	66.9	0	3.4	0	1.8	0	1.8	0	1.8	0	1.8
16	84.9	67.1	0	3.3	0	1.9	0	1.9	0	1.9	0	1.9
17	84.6	67.3	0	3.2	0	1.9	0	1.9	0	1.9	0	1.9
18	83.8	67.1	0	2.9	0	1.9	0	1.9	0	1.9	0	1.9
19	82.4	67.5	0	2.4	0	1.6	0	1.6	0	1.6	0	1.6
20	80.6	68.9	0	1.8	0	1.3	0	1.3	0	1.3	0	1.3
21	78.5	71.0	0	1.3	0	1.2	0	1.2	0	1.2	0	1.2
22	76.1	69.9	0	1.0	0	0.8	0	0.8	0	0.8	0	0.8
23	73.4	68.0	0	0.7	0	0.3	0	0.3	0	0.3	0	0.3
24	70.8	65.5	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0

June			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	1.5	0	0.6	0	0.7	0	0.7	0	0.7
2	72.6	68.4	0	1.3	0	0.3	0	0.3	0	0.3	0	0.3
3	70.9	67.3	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
4	69.6	66.5	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
5	68.7	65.8	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
6	68.5	65.7	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
7	69.0	66.3	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
8	70.6	66.9	0	1.9	0	0.0	0	0.0	0	0.0	0	0.0
9	73.0	67.7	0	2.5	0	0.0	0	0.0	0	0.0	0	0.0
10	76.1	68.1	0	2.9	0	1.3	0	1.3	0	1.3	0	1.3
11	79.5	69.1	0	3.5	0	1.7	0	1.7	0	1.7	0	1.7
12	82.9	70.1	0	3.9	0	2.2	0	2.2	0	2.2	0	2.2
13	86.0	71.0	0	4.3	0	2.6	0	2.6	0	2.6	0	2.6
14	88.4	72.5	0	4.5	0	3.1	0	3.1	0	3.1	0	3.1
15	90.0	74.0	0	4.6	0	3.5	0	3.5	0	3.5	0	3.5
16	90.5	73.7	0	4.6	0	3.3	0	3.3	0	3.3	0	3.3
17	90.3	74.2	0	4.5	0	3.4	0	3.4	0	3.4	0	3.3
18	89.4	73.9	0	4.1	0	3.3	0	3.3	0	3.3	0	3.3
19	88.1	74.5	0	3.7	0	3.1	0	3.1	0	3.1	0	3.1
20	86.4	75.3	0	3.0	0	2.6	0	2.6	0	2.6	0	2.6
21	84.3	76.5	0	2.6	0	2.5	0	2.5	0	2.5	0	2.5
22	81.9	75.7	0	2.3	0	2.2	0	2.2	0	2.2	0	2.2
23	79.5	74.0	0	2.0	0	1.7	0	1.7	0	1.7	0	1.7
24	77.0	72.1	0	1.8	0	1.2	0	1.2	0	1.2	0	1.2

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

July			Design		Weekday		Saturday		Sunday		Monday	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	1.8	0	0.4	0	0.5	0	0.5	0	0.5
2	72.4	69.4	0	1.4	0	0.2	0	0.2	0	0.2	0	0.2
3	71.3	68.4	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
4	70.5	67.7	0	1.2	0	0.0	0	0.0	0	0.0	0	0.0
5	70.0	67.4	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
6	69.9	67.5	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0
8	71.7	69.0	0	2.1	0	0.0	0	0.0	0	0.0	0	0.0
9	73.7	69.5	0	2.6	0	0.0	0	0.0	0	0.0	0	0.0
10	76.2	70.6	0	3.0	0	1.6	0	1.6	0	1.6	0	1.6
11	78.9	71.8	0	3.4	0	1.9	0	1.9	0	1.9	0	1.9
12	81.4	73.0	0	3.9	0	2.5	0	2.5	0	2.5	0	2.5
13	83.4	74.4	0	4.2	0	2.8	0	2.8	0	2.8	0	2.8
14	84.8	74.8	0	4.4	0	3.1	0	3.1	0	3.1	0	3.1
15	85.2	75.0	0	4.5	0	3.2	0	3.2	0	3.2	0	3.2
16	85.1	75.0	0	4.5	0	3.1	0	3.1	0	3.1	0	3.1
17	84.6	74.7	0	4.4	0	3.0	0	3.0	0	3.0	0	3.0
18	83.8	74.6	0	4.1	0	2.9	0	2.9	0	2.9	0	2.9
19	82.7	74.6	0	3.7	0	2.7	0	2.7	0	2.7	0	2.7
20	81.4	74.4	0	3.1	0	2.3	0	2.3	0	2.3	0	2.3
21	79.9	74.9	0	2.6	0	1.9	0	1.9	0	1.9	0	1.9
22	78.4	74.0	0	2.3	0	1.6	0	1.6	0	1.6	0	1.6
23	76.8	72.7	0	2.1	0	1.1	0	1.1	0	1.1	0	1.1
24	75.2	71.6	0	1.9	0	0.8	0	0.8	0	0.8	0	0.8

August			Design		Weekday		Saturday		Sunday		Monday	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	1.8	0	0.6	0	0.7	0	0.7	0	0.7
2	73.2	70.3	0	1.4	0	0.3	0	0.3	0	0.3	0	0.3
3	71.7	68.9	0	1.2	0	0.0	0	0.0	0	0.0	0	0.0
4	70.4	67.8	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
5	69.5	66.8	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
6	68.9	66.4	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
7	68.7	66.4	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
8	69.2	66.8	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
9	70.8	67.7	0	2.4	0	0.0	0	0.0	0	0.0	0	0.0
10	73.2	67.7	0	2.8	0	0.1	0	0.1	0	0.1	0	0.1
11	76.2	68.8	0	3.3	0	1.4	0	1.4	0	1.4	0	1.4
12	79.3	70.3	0	3.7	0	1.9	0	1.9	0	1.9	0	1.9
13	82.3	72.2	0	4.2	0	2.4	0	2.4	0	2.4	0	2.4
14	84.7	73.7	0	4.5	0	2.8	0	2.8	0	2.8	0	2.8
15	86.3	74.6	0	4.6	0	3.1	0	3.1	0	3.1	0	3.1
16	86.8	75.1	0	4.5	0	3.2	0	3.2	0	3.2	0	3.2
17	86.6	75.1	0	4.3	0	3.1	0	3.1	0	3.1	0	3.1
18	86.0	75.3	0	4.1	0	3.3	0	3.3	0	3.3	0	3.3
19	85.1	76.0	0	3.5	0	2.9	0	2.9	0	2.9	0	2.9
20	83.8	76.8	0	2.9	0	2.5	0	2.5	0	2.5	0	2.5
21	82.3	77.2	0	2.7	0	2.4	0	2.4	0	2.4	0	2.4
22	80.6	76.3	0	2.3	0	2.0	0	2.0	0	2.0	0	2.0
23	78.7	75.3	0	2.0	0	1.6	0	1.6	0	1.6	0	1.6
24	76.8	73.7	0	1.8	0	1.2	0	1.2	0	1.2	0	1.2

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

September			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
2	67.6	65.0	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	0.0	-1,384	0.0	-1,455	0.0	-1,455	0.0	-1,455	0.0
7	62.2	60.2	0	0.0	-8,748	0.0	-8,748	0.0	-8,748	0.0	-8,748	0.0
8	62.9	60.9	0	0.5	-6,315	0.0	-6,315	0.0	-6,315	0.0	-6,315	0.0
9	64.7	61.8	0	1.2	-2,512	0.0	-2,512	0.0	-2,512	0.0	-2,512	0.0
10	67.6	62.1	0	1.7	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	2.1	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	2.5	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	3.0	0	0.0	0	0.0	0	0.0	0	0.0
14	81.2	68.4	0	3.2	0	1.3	0	1.3	0	1.3	0	1.3
15	83.0	70.0	0	3.3	0	2.0	0	2.0	0	2.0	0	2.0
16	83.7	70.5	0	3.4	0	2.1	0	2.1	0	2.1	0	2.1
17	83.4	70.5	0	3.1	0	2.1	0	2.1	0	2.1	0	2.1
18	82.8	70.9	0	2.7	0	2.0	0	2.0	0	2.0	0	2.0
19	81.6	72.7	0	2.3	0	1.7	0	1.7	0	1.7	0	1.7
20	80.1	74.7	0	2.0	0	1.6	0	1.6	0	1.6	0	1.6
21	78.3	74.1	0	1.6	0	1.3	0	1.3	0	1.3	0	1.3
22	76.3	72.4	0	1.2	0	0.9	0	0.9	0	0.9	0	0.9
23	74.1	70.7	0	0.9	0	0.4	0	0.4	0	0.4	0	0.4
24	71.8	68.9	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0

October			------ Design -----		----- Weekday -----		----- Saturday----		------ Sunday -----		------ Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-18,317	0.0	-18,312	0.0	-18,312	0.0	-18,312	0.0
2	50.1	48.6	0	0.0	-21,034	0.0	-21,040	0.0	-21,040	0.0	-21,040	0.0
3	48.4	46.9	-11,904	0.0	-22,817	0.0	-22,817	0.0	-22,817	0.0	-22,817	0.0
4	47.1	45.8	-17,538	0.0	-24,406	0.0	-24,406	0.0	-24,406	0.0	-24,406	0.0
5	46.3	44.8	-18,441	0.0	-25,783	0.0	-25,783	0.0	-25,783	0.0	-25,783	0.0
6	46.0	44.5	-18,674	0.0	-26,967	0.0	-26,967	0.0	-26,967	0.0	-26,967	0.0
7	46.8	45.3	-17,701	0.0	-26,258	0.0	-26,258	0.0	-26,258	0.0	-26,258	0.0
8	48.9	47.5	-12,906	0.0	-23,281	0.0	-23,281	0.0	-23,281	0.0	-23,281	0.0
9	52.2	49.9	-6,662	0.0	-18,816	0.0	-18,816	0.0	-18,816	0.0	-18,816	0.0
10	56.2	52.5	-314	0.0	-14,104	0.0	-14,104	0.0	-14,104	0.0	-14,104	0.0
11	60.4	54.4	0	0.0	-8,877	0.0	-8,877	0.0	-8,877	0.0	-8,877	0.0
12	64.4	56.0	0	0.0	-3,867	0.0	-3,867	0.0	-3,867	0.0	-3,867	0.0
13	67.7	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	1.2	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	0.0	-348	0.0	-348	0.0	-348	0.0	-348	0.0
21	62.1	59.4	0	0.0	-8,349	0.0	-8,349	0.0	-8,349	0.0	-8,349	0.0
22	59.6	57.3	0	0.0	-11,067	0.0	-11,067	0.0	-11,067	0.0	-11,067	0.0
23	57.0	55.1	0	0.0	-13,589	0.0	-13,589	0.0	-13,589	0.0	-13,589	0.0
24	54.5	52.7	-1,516	0.0	-15,979	0.0	-15,979	0.0	-15,979	0.0	-15,979	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

November Hour	OADB	OAWB	Design Htg Btuh	Clg Ton	Weekday Htg Btuh	Clg Ton	Saturday Htg Btuh	Clg Ton	Sunday Htg Btuh	Clg Ton	Monday Htg Btuh	Clg Ton
1	52.0	49.2	-17,078	0.0	-19,633	0.0	-19,637	0.0	-19,637	0.0	-19,637	0.0
2	49.4	47.3	-18,994	0.0	-22,161	0.0	-22,161	0.0	-22,161	0.0	-22,161	0.0
3	47.2	45.3	-20,718	0.0	-24,882	0.0	-24,882	0.0	-24,882	0.0	-24,882	0.0
4	45.3	43.4	-22,011	0.0	-26,907	0.0	-26,907	0.0	-26,907	0.0	-26,907	0.0
5	43.9	42.2	-22,878	0.0	-28,299	0.0	-28,299	0.0	-28,299	0.0	-28,299	0.0
6	43.0	41.4	-23,000	0.0	-29,645	0.0	-29,645	0.0	-29,645	0.0	-29,645	0.0
7	42.7	41.2	-22,005	0.0	-30,405	0.0	-30,405	0.0	-30,405	0.0	-30,405	0.0
8	43.5	42.0	-18,873	0.0	-29,629	0.0	-29,629	0.0	-29,629	0.0	-29,629	0.0
9	45.9	44.0	-12,956	0.0	-26,359	0.0	-26,359	0.0	-26,359	0.0	-26,359	0.0
10	49.4	46.6	-6,546	0.0	-22,082	0.0	-22,082	0.0	-22,082	0.0	-22,082	0.0
11	53.8	48.6	0	0.0	-17,382	0.0	-17,382	0.0	-17,382	0.0	-17,382	0.0
12	58.4	50.6	0	0.0	-12,245	0.0	-12,245	0.0	-12,245	0.0	-12,245	0.0
13	62.8	52.6	0	0.0	-7,865	0.0	-7,865	0.0	-7,865	0.0	-7,865	0.0
14	66.3	54.5	0	0.0	-4,070	0.0	-4,070	0.0	-4,070	0.0	-4,070	0.0
15	68.7	55.7	0	0.3	-1,279	0.0	-1,279	0.0	-1,279	0.0	-1,279	0.0
16	69.5	56.1	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	0.7	-865	0.0	-865	0.0	-865	0.0	-865	0.0
18	68.3	57.0	0	0.3	-2,856	0.0	-2,856	0.0	-2,856	0.0	-2,856	0.0
19	66.9	59.4	0	0.0	-5,047	0.0	-5,047	0.0	-5,047	0.0	-5,047	0.0
20	65.0	59.4	0	0.0	-6,927	0.0	-6,927	0.0	-6,927	0.0	-6,927	0.0
21	62.8	58.2	0	0.0	-9,295	0.0	-9,295	0.0	-9,295	0.0	-9,295	0.0
22	60.2	56.1	0	0.0	-11,876	0.0	-11,876	0.0	-11,876	0.0	-11,876	0.0
23	57.5	54.0	-6,299	0.0	-14,277	0.0	-14,277	0.0	-14,277	0.0	-14,277	0.0
24	54.7	51.7	-15,294	0.0	-16,891	0.0	-16,891	0.0	-16,891	0.0	-16,891	0.0

December Hour	OADB	OAWB	Design Htg Btuh	Clg Ton	Weekday Htg Btuh	Clg Ton	Saturday Htg Btuh	Clg Ton	Sunday Htg Btuh	Clg Ton	Monday Htg Btuh	Clg Ton
1	44.9	42.5	-23,134	0.0	-28,683	0.0	-28,683	0.0	-28,683	0.0	-28,683	0.0
2	43.2	41.1	-24,618	0.0	-30,556	0.0	-30,556	0.0	-30,556	0.0	-30,556	0.0
3	41.8	39.8	-25,915	0.0	-32,050	0.0	-32,050	0.0	-32,050	0.0	-32,050	0.0
4	40.7	38.7	-27,030	0.0	-33,254	0.0	-33,254	0.0	-33,254	0.0	-33,254	0.0
5	40.1	38.4	-27,884	0.0	-34,170	0.0	-34,170	0.0	-34,170	0.0	-34,170	0.0
6	39.9	38.4	-27,706	0.0	-34,498	0.0	-34,498	0.0	-34,498	0.0	-34,498	0.0
7	40.5	39.0	-26,945	0.0	-34,907	0.0	-34,907	0.0	-34,907	0.0	-34,907	0.0
8	42.2	40.7	-25,493	0.0	-33,814	0.0	-33,814	0.0	-33,814	0.0	-33,814	0.0
9	44.9	43.4	-20,778	0.0	-30,200	0.0	-30,200	0.0	-30,200	0.0	-30,200	0.0
10	48.2	45.8	-15,711	0.0	-26,296	0.0	-26,296	0.0	-26,296	0.0	-26,296	0.0
11	51.7	48.3	-10,193	0.0	-21,907	0.0	-21,907	0.0	-21,907	0.0	-21,907	0.0
12	55.0	50.7	-4,906	0.0	-17,742	0.0	-17,742	0.0	-17,742	0.0	-17,742	0.0
13	57.7	52.0	-990	0.0	-14,250	0.0	-14,250	0.0	-14,250	0.0	-14,250	0.0
14	59.5	52.6	0	0.0	-12,140	0.0	-12,140	0.0	-12,140	0.0	-12,140	0.0
15	60.1	52.7	0	0.0	-11,275	0.0	-11,275	0.0	-11,275	0.0	-11,275	0.0
16	59.9	52.6	0	0.0	-11,323	0.0	-11,323	0.0	-11,323	0.0	-11,323	0.0
17	59.2	52.1	0	0.0	-12,143	0.0	-12,143	0.0	-12,143	0.0	-12,143	0.0
18	58.2	51.8	0	0.0	-14,365	0.0	-14,365	0.0	-14,365	0.0	-14,365	0.0
19	56.8	52.2	-7,786	0.0	-16,215	0.0	-16,215	0.0	-16,215	0.0	-16,215	0.0
20	55.0	51.4	-12,079	0.0	-18,101	0.0	-18,101	0.0	-18,101	0.0	-18,101	0.0
21	53.1	50.1	-15,218	0.0	-20,115	0.0	-20,115	0.0	-20,115	0.0	-20,115	0.0
22	51.0	48.1	-17,858	0.0	-22,221	0.0	-22,221	0.0	-22,221	0.0	-22,221	0.0
23	48.9	46.2	-20,111	0.0	-24,503	0.0	-24,503	0.0	-24,503	0.0	-24,503	0.0
24	46.9	44.1	-21,826	0.0	-26,532	0.0	-26,532	0.0	-26,532	0.0	-26,532	0.0

01 Card - Job Information

Project: ENERGY STUDY OF COOLING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORPS OF ENGINEERS
Program User: BON
Comments: BUILDING 25414 (8 BLDGS)

-----CARD 08-- Climatic Information ---

Weather Code	Summer Clearness Number	Winter Clearness Number	Summer Design Dry Bulb	Summer Design Wet Bulb	Winter Design Dry Bulb	Building Orientation	Summer Ground Reflect	Winter Ground Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods--------------------------------------

1st Month Cooling Simulation	Last Month Cooling Simulation	Peak Cooling Load Hr	1st Month Summer Period	Last Month Summer Period	1st Month Daylight Savings	Last Month Daylight Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters---------------------------

Cooling Load Method	Heating Load Method	Ventilation Method	Airflow Input Units	Airflow Output Units	Room Circulation Rate	Put Wall RA Load to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

-------------------- Load Section Alternative #1 --------------------

---- Load Alternative ----
Number	Description
1	

-----CARD 20-- General Room Parameters ---

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
1	1	SERVICE MODULE	2030		6	2.4		11.4			

-----CARD 21-- Thermostat Parameters --

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters --

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				182			

-----CARD 24-- Wall Parameters ---

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	46.7	11		181	0			
1	2	46.7	11		181	270			
1	3	46.7	11		181	180			
1	4	46.7	11		181	90			

-----CARD 25-- Wall/Glass Parameters --

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	8	8.5	1	1.03	.87	3				
1	2	8	11.5	1	1.03	.87	4				
1	4	8	11.5	1	1.03	.87	4				

-----CARD 26-- Schedules --

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights ---

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	Daylighting Reference Point 1	Reference Point 2
1	35	PEOPLE	345	435	3550	WATTS	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment --

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	VENDING, FRIG	5005	BTUH	FGHEAT						
1	2	MICROWAVE	200	WATTS	FGHEAT						
1	3	T V	1.0	KW	FGHEAT						
1	4	COFFE POT	1120	BTUH	FGHEAT						

-----CARD 29--- Room Airflows ---

| | --------------Ventilation------------- | | | | --------------Infiltration------------ | | | | --Reheat Minimum-- | |
Room Number	-----Cooling----- Value	Units	-----Heating----- Value	Units	-----Cooling----- Value	Units	-----Heating----- Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows ---

| | --------------Main-------------- | | | | ------------Auxiliary------------ | | | | --Room Exhaust-- | |
Room Number	----Cooling---- Value	Units	----Heating---- Value	Units	----Cooling---- Value	Units	----Heating---- Value	Units	Value	Units
1	1	CFM-SF	1	CFM-SF						

-----CARD 33-- External Shading ---

| | | ---------OVERHANG--------- | | --------------------VERTICAL FINS-------------------- | | | | |
Shading Type	Glass Height	Height Above Glass	Projection Out	Glass Width	Projection Left	Left Projection Out	Projection Right	Right Projection Out	Adjacent Building Flag
3	8.0	.5	2						
4	8.0	.5	6.7	11.5		6.7		6.7	NO

-------------------- System Section Alternative #1 ---------------------

-----CARD 40--- System Type --

| | | ------------OPTIONAL VENTILATION SYSTEM------------ | | | | |
System Set Number	System Type	Ventil Deck Location	Cooling SADBVh	Heating SADBVh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	SZ						

-----CARD 41-- Zone Assignment ---

System Set Number	Ref #1 Begin	End	Ref #2 Begin	End	Ref #3 Begin	End	Ref #4 Begin	End	Ref #5 Begin	End	Ref #6 Begin	End
1	1	1										

```
-----CARD 42--- Fan SP and Duct Parameters-----------------------------------------------
System Cool  Heat  Return  Mn Exh  Aux   Rm Exh  Cool     Return   Supply  Supply  Return
Set    Fan   Fan   Fan     Fan     Fan   Fan     Fan Mtr  Fan Mtr  Duct    Duct    Air
Number SP    SP    SP      SP      SP    SP      Loc      Loc      Ht Gn   Loc     Path
1
```

```
-----CARD 48-- Cooling Capacity Overrides ------------------------------------------------
System                    Misc     -------------MAIN  COOLING------------  ---AUX COOLING----
Set    People   Lights    Loads    Capacity Capacity Capacity Capacity Capacity Capacity
Number Variance Variance  Variance Value    Units    Sizing   Location Value    Units
1                         85
```

Utility Description Reference Table

    Schedules:
        CLGCONST SAMPLE COOLING TSTAT SCHEDULE
        FGHEAT   SCHD FOR HEAT LOAD CALCS
        HTGCONST SAMPLE HEATING TSTAT SCHEDULE
        YES AVAILABLE (100%)
    System:
        SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Temperature
---- ------------
   0   75
  24

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Util Percent
----   ------------
  0   0
 24

Starting Month: HTG   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Util Percent
----   ------------
  0   0
 24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN   Ending Month: DEC
Starting Day Type: DSGN   Ending Day Type: SUN

Hour   Temperature
----   ------------
   0   72
  24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN   Ending Month: HTG
Starting Day Type: DSGN   Ending Day Type: SUN

Hour Util Percent
---- ------------
   0   100
  24